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Happy 10th birthday, Power Mac!
Apple just wouldn't be the same without you.

Simon Jary
editor-in-chief

Mac Power of 10

In all the excitement of the Mac's 20th anniversary, another turning point in Apple's history has been overlooked. Ten years ago, less than a month after it shipped the world's first consumer digital camera, Apple launched the original Power Mac. The transition from Motorola's 680x0 chips to PowerPC was a shift just as challenging for Apple as that from Mac OS 9 to OS X.

The 680x0 chip family was fast running out of steam, especially in the face of Intel's x86 technology that dominated the PC industry. Apple did consider moving the Mac to Intel's architecture. In 1992 Apple and networking giant Novell began work on a project called Star Trek – so called because it would boldly go somewhere Apple had never been before, and also because computer engineers like dressing up as Klingons. When Bill Gates heard of the attempt to run the Mac on Intel, he sneered that it would be "like putting lipstick on a chicken".

In just a few months the engineers had the Finder, QuickTime and parts of several Apple technologies running on a 486 PC. Unfortunately, in-fighting at Apple and the wariness of developers who'd have to rewrite all their software fired a photon torpedo directly at Star Trek.

Apple instead devoted all its R&D to a partnership with Motorola and old foe IBM. IBM was furious with Microsoft for sneakily pulling out of its joint venture to produce a new operating system called OS/2 in order to release its own suspiciously similar Windows NT. Both Apple and IBM wanted to bloody Bill's nose. In 1991 Apple showed its in-development Mac OS – code-named Pink – running on an IBM PC. IBM pledged to help develop Pink and promised Apple a licence to its forthcoming PowerPC processor.

The PowerPC was a RISC (Reduced Instruction Set Computing) processor. RISC allowed a chip to be more efficient than Intel and Motorola's CISC (Complex ISC) by carrying only those instructions most commonly used. CISC required ever more transistors to make each new generation of processor faster. In theory, RISC would still be going long after CISC chips became so overloaded that they wouldn't fit inside anything smaller than a shed.

Apple desired a launch date of January 24 – to mark the Mac's tenth anniversary – but compromised on March 14. PowerPC was based on IBM's Power technology for heavy-duty servers and industrial-strength workstations, so an early-1994 deadline was possible. The tricky thing was developing the Mac OS software that would run on the chips when they were ready.

Apple rejected the chance to entirely rebuild the Mac OS to run natively with the PowerPC chip, which would have dramatically increased software performance but wouldn't have run existing Mac software. Instead the OS was to be tweaked so that only the critical 10 per cent of code would be native, and the rest would be ancient 680x0 stuff. The hero of the day was a brilliant software engineer called Gary Davidian, who successfully mixed the two types of code and developed it in such a way that older Mac software could run in emulation on the new chip.

The next big thing Apple needed was a bunch of applications that showed-off just how much faster the eventual Power Mac would be. Unfortunately, through a combination of Apple's ineptitude and technical arrogance, the company's plan to create a cross-platform framework for software development was a disaster. Luckily for all involved, a small company called Metrowerks saved the day.

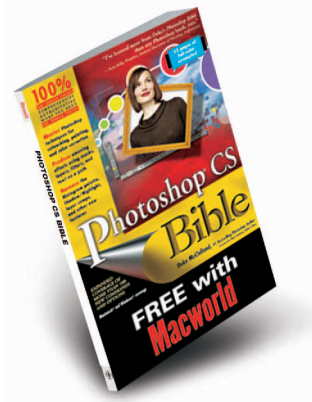
Its CodeWarrior program revolutionized PowerPC application development. In a Montreal demo to Apple execs a Metrowerks employee started to build a program using Symantec's PowerPC recompiler. At the same time a colleague began travelling to the meeting from his home in Boston. He arrived there three hours and 15 minutes later, as the build using Symantec was still grinding away. One minute and 50 seconds later he'd finished his own build using CodeWarrior. Without CodeWarrior there wouldn't have been over a hundred PowerPC-optimized programs available within three months of the Power Mac's launch.

The arrival of PowerPC marked the real start of the Chip Wars that would quickly mutate into the Megahertz War. Apple, IBM and Motorola laid into Intel by demeaning its old-fashioned CISC architecture, claiming that RISC was the only way forward in the long term. At 1993's November Comdex show in Las Vegas, the forthcoming PowerPC blew away Intel's forthcoming Pentium in demonstrations. These Power Mac vs Pentium PC bake-off speed contests would be a familiar event at nearly every Macworld Expo since.

The first months of the PowerPC proved that the switch was vital to Apple's future. It was, as then Apple CEO Michael Spindler declared, a "quantum leap forward". Even Bill Gates appeared at the launch – although via an overhead screen to save him from the boos and tomatoes. Within the first two weeks of its March 14 launch, 145,000 Power Macs were sold. Apple shipped more personal computers in the US during the third quarter of 1994 than any other company, knocking Compaq off the top-spot. It sold a million Power Macs in the first year.

The success of PowerPC didn't go as far as the 20 per cent market share that Apple had predicted – in fact it dropped a percentage point to 8.3, because Apple priced the systems too high despite the PowerPC then costing less than the Pentium. But it did at least keep Apple's core customer base onboard, and move Apple to a more competitive position in the PC market – one where the promise of IBM's next-generation, industrial-strength G5 shows real potential. Microsoft has reportedly dumped Intel for a G5 in the next generation of Xbox. Happy birthday, PowerPC – it looks like your time has finally come. **MW**

'Both Apple and IBM wanted to bloody Bill's nose. The PowerPC was their weapon.'



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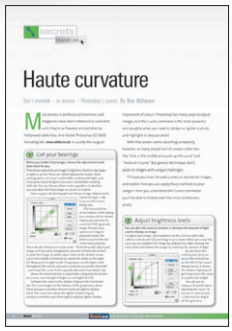

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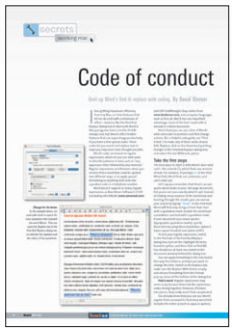

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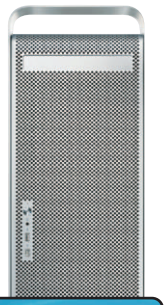

215 Macworld's advice for readers buying a Power Mac, iMac, iBook, eMac or PowerBook G4. A full listing of our acclaimed hardware product reviews and group tests for the previous 12 months, with features index and detailed buying advice.

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Music, Macs and OS X. It's not all plain sailing: migrating from OS 9 to OS X can mean investing in new software and equipment. Sound on Sound editor Paul White writes on the obstacles and solutions.

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Desktop publishing is changing as Adobe InDesign gains ever more market traction against veteran DTP app, QuarkXPress. Alistair Dabbs shares his **top ten tips** to help users migrate from XPress to InDesign.

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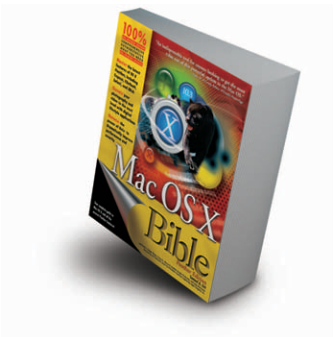

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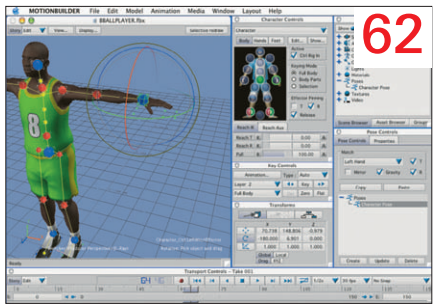

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(Letters received without a name and address will not receive a prize.)

⌘ What's cookin'?

Clicking on a Google link for an iMac stockist recently took me to a page on the John Lewis Web site (pictured below).

Nothing unusual about that, you might think. We know John Lewis is one of the few high-street retailers to proudly stock Apple Macs, but even its in-store assistants would surely have difficulty finding a use for the iMac in the cookware section – unless of course they scooped out the innards and used the base as a wok.

Paul Keyworth

⌘ Mac support: redux

So Martin Pittaway of MRC UK Ltd thinks that the more technically minded Macworld readers should consider the livelihoods of the Apple Certified Service Engineers before explaining problems and remedies to fellow "technically minded" readers (Letters, April 2004).

In the late Eighties, when my first Mac developed a fault with its floppy-disc drive, I was charged £40 callout and about £20 for labour to remove a piece of fluff from the drive. Never again: adding memory, installing drives, replacing fans, or mending the drive flap on a G4 Quicksilver are all easily carried out by any technically minded owner.

Obviously not everyone has the ability or confidence to open the case and try to solve the problem, but advising those of us who do have the skill, patience and thriftiness, to do otherwise is a bit of a cheek.

Iain Ross

⌘ Addressing issues

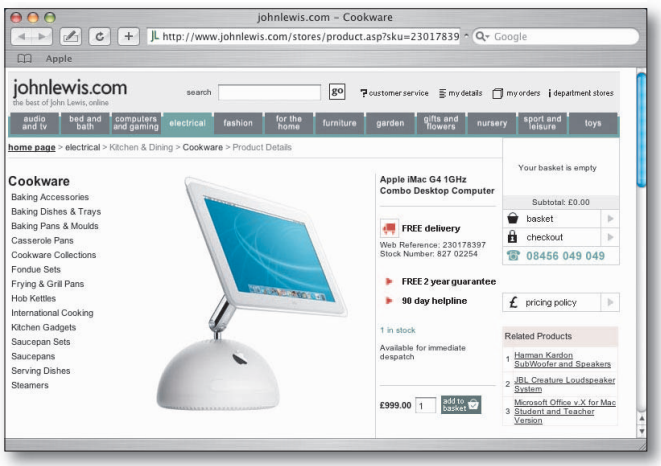
Now, come on guys. I've been around computers since the Sinclair ZX. I have a very simple need, and I can't believe it's just me. How do you save telephone numbers, addresses and email addresses on your computer?

You'll tell me to use Address Book. Here's the problem. I receive an email from J Smith of Brown & Co. It's easy enough to enter the address book and log his details under 'J Smith'. But hang on – I already have an entry for F Bloggs who also works for Brown and Co – so the address, telephone number, fax number and so on for Brown & Co are already there.

Furthermore, there are other guys in the office who might need to look up a phone number of someone in Brown & Co, and might just want to print an address label to stick on an envelope. As luck would have it, a change-of-address notification has just come through the post – so what do we do? Email a memo to everyone in the office and tell them to update all their individual entries for Brown & Co accordingly? This shouldn't be rocket science. The answer is obvious, but the software isn't.

I've written databases in BASIC, DBase, & Access to do this kind of thing in the past. But surely there's something off the shelf. And surely every commercial user needs it?

Keith Adamson



⌘ The missing manual

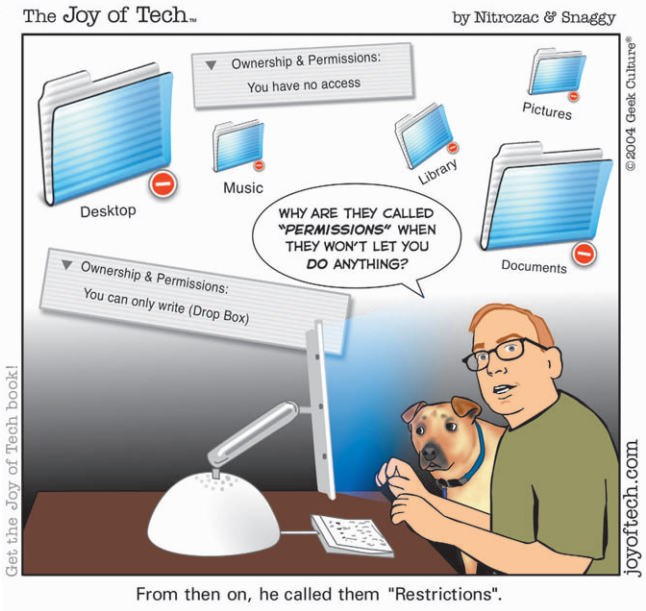
I recently purchased a shiny new eMac for my parents to bring them kicking and screaming into the 21st century, and showed them the delights of email and surfing the Web.

I was slightly annoyed that Apple doesn't supply new Macs with a manual of any kind – there was a small leaflet type thing in the box, explaining setup and how to switch the machine on, but nothing about the OS.

I have resigned myself to the fact that I will be their teacher/repair man for the foreseeable future, But surely it wouldn't cost Apple much to include a manual with new Macs – just something simple to outline the basics; something for my Mum and Dad to read at night.

I wonder is this why the Switch campaign failed? Did people switch, then open their boxes and think: ok, now what do I do now?

Gerard Hughes



From then on, he called them "Restrictions".

⌘ NOT the sound of music

I agree wholeheartedly with Andy Ihnatko (April 2004). I'm a musician. A couple of Mac-using friends of mine have taken the iLife plunge – and have inevitably sent me their first musical fumblings from GarageBand.

Now don't get me wrong – I think it's a fantastic program. Although I run Logic, I still use GarageBand for noodling around and having fun. But I dread the ping of Mail and the "hey, listen to this!" email that accompanies it. There's more to music than stringing loops together. Buy a keyboard and learn to play *real* music before you send it. Please!

Name witheld MW

Macworld.co.uk Join in the live IT debates on Macworld Online Forum (www.macworld.co.uk/forum).

Start with the 30-day trial of Director MX 2004, follow with trials of PerfectPA and Interarchy 7, and enjoy rally racing courtesy of Rally Shift, along with all the usual demos, shareware and updaters. Over to Vic Lennard...

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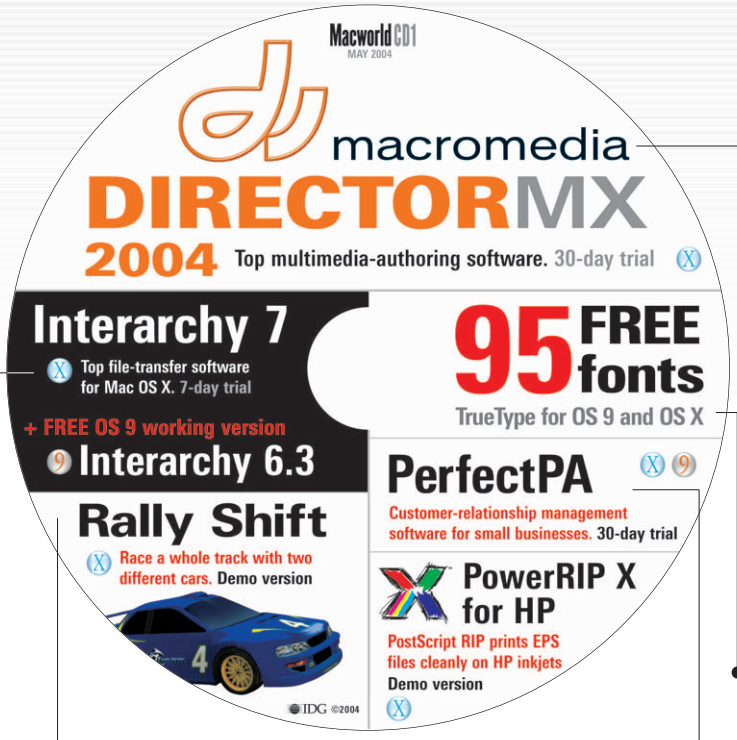
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Director MX 2004 30-day trial

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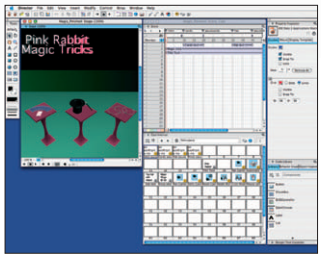
Requires Mac OS X 10.2.6 or higher.



95 FREE TrueType fonts from dinc!

Courtesy of dincTYPE, this month's CD includes 95 great free fonts for you to use. The variety is huge and includes serifs, sans serifs, and some excellent headline faces. Most of them have a story attached concerning the angst behind their design and many of them are retro throwbacks that are perfect for special projects.

If you like them, check out the Web site and email a quick 'thanks' to **dinc021@aol.com**

I'm amyjohnson - all lowercase and with some interesting descenders

I'm feelingroovy, a real throwback to those flowerpower days

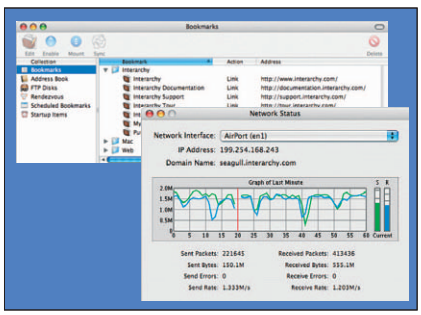
I'M KARMACHAMELEON - ALL UPPERCASE AND STYLISH IN A CURVY WAY

I'M PEPPERMINT LUMP - USE ME TO DRAW ATTENTION TO MYSELF!

Rally Shift demo

Drive high-performance rally cars on a variety of courses. Compete against hard-to-beat computer drivers through forests, windy mountain passes, and desert. Put your driving skills to the test. Slide through turns on dirt roads, and brake and accelerate at the right moment to keep your car on the road.

The demo offers a choice of two cars on a single track. Requires Mac OS X 10.2.8 or higher.



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Interarchy 7 has been entirely revamped for Mac OS X. Efficiently and reliably fetch, edit or transmit files to any kind of Internet server via a totally familiar Mac interface. Interarchy will work with servers running on any operating system including Windows and Unix.

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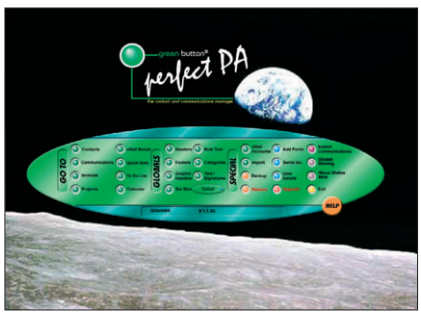

PerfectPA 30-day trial

Manage your communications and marketing at the touch of a button. PerfectPA files letters, emails and faxes in one location directly accessible from the contact record and has a facility to view and store documents on a project-by-project basis. It also makes targeted mailings by post or email easy to select, produce and record.

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Cover CD1

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INSTALL

Before you start working your way through the software on our CD, go to the System Utilities folder and make sure you install the following:

Adobe Reader 6 (OS X only)
Install this to be able to read many of the on-screen manuals. Acrobat Reader 5.1 also available.

StuffIt Standard
Installers for StuffIt Standard 7.03 (Mac OS 9) and StuffIt Standard 8.02 (Mac OS X) are included.

QuickTime 6
Some programs require QuickTime 6. This can be downloaded from www.apple.com/quicktime/download.

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Create advanced 3D animation. Unique real-time architecture, intelligent character technology and breakthrough story timeline. Demo.

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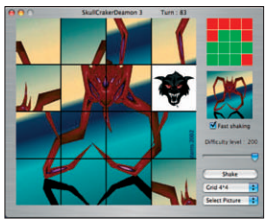
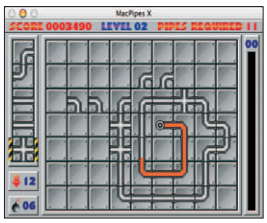
Trisection

PowerRIP X for HP

PostScript Level 3-compatible printer driver for Hewlett-Packard inkjet printers. Works with all Mac OS X applications. Demo.

GAMES WORLD



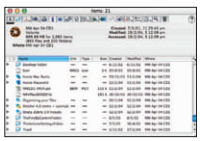


This month's Top 10 Shareware Games includes the latest versions of many of your favourites plus some new games, including the tile-pushing Skull Cracker Deamon (far left) and tube-connecting MacPipes (left).

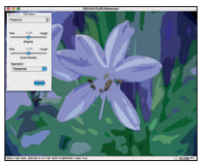
MAC OS X/9 SHAREWARE & UPDATERS

Over 90 useful programs, all subdivided into categories, including:
Address Book Importer
AddressWeb 2.1
Alarm Clock Pro 6.3.9

ATPM 10.03
Audio Recorder 1.4
Authoxy 3.1.1
BCI 4.0.1
BookLightning 1.2
Books 2.0.4
Clarion 1.4
ClipboardMenu 1.2
Cocktail
Contact Keeper 4.2.5
Default Folder X 1.9.3
Drat 1.2
DVBackup 1.2.2
EasyCrop 1.5.8



File Buddy 7
Filemaker vCard Creator 2.8
iSparx 1.4
iTunes LAME 2.0.7
iTunesSaver 2.2.1
KeywordAssistant 1.6
Konfabulator 1.5.6
Mac Pilot 1.1.3
PostView 1.4
QuickMovie 1.5.1
Registry 1.3.1
Scheduler 4.0.2



ToyViewer 4.51
UnCoverIt 2.0.2
VideoCalc X
VirtualScreens
Vuescan 7.6
YAiC 1.2

UPDATERS
This month's dedicated updaters folder includes over 30MB of patches to bring many popular applications bang up-to-date, including:
Ableftp 4.28
Halo 1.04.1
MacDraft 5.5.3
NAV Mar 2004
Virex Mar 2004
Xtream Path 1.1.1

CD CATALOGUE

Courtesy of Mark Pirri's superb DiskTracker program, Macworld brings you a searchable catalogue of all our CDs from 1997 to 2004 – over 448,000 files! This will grow month by month to allow you to find any file you want, without wearing out your CD-ROM drive. The latest version of DiskTracker (2.3) is also included – don't forget to register if you find our library useful.

FAULTY COVER CD-ROM?

- If your cover disc is broken and you want a replacement CD, please contact Jaime Parker, on 020 7831 9252, or email at jaimep@macworld.co.uk
- If your cover CD doesn't seem to work as it should, please check you have read all the instructions on the cover disc pages carefully first. If it still doesn't work, then please email cd@macworld.co.uk
- Drag installer files from the CD to your desktop before clicking on them.

DON'T MISS...

Cool Extras
Three new sets of icons:
- Excellence Collection from Miguel Vicente
- Pasta – eight icons from Saho's IconRoom
- Smilemania v2 – another 40 icons from VladZ

Mac ISP
Access offer from Moose Internet Services.

Netscape/Internet Explorer/Opera
Netscape X 7.1, IE X 5.2.3, IE 5.1.7 & OE 5.0.6, and Opera 6.0.3

Plus...
... many thanks to Simon Youngjohns (youngjohns@hotmail.com) for our CD icons.

SHAREWARE

Association of Shareware Professionals

Shareware is a distribution method, not a type of software. It makes fitting your needs easier, as you can try before you buy. Shareware has the ultimate money-back guarantee – if you don't use the product, you don't pay for it. If you try a Shareware program and continue using it, you are expected to register. Support shareware authors so that they continue to provide high-quality programs for the Mac.

page 14

Cover CD 2

MAY 2004

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SoundShuttle

FULL WORKING VERSION

SoundShuttle AU/VST is a revolutionary loop & sample preview plug-in that opens in your audio sequencer and lets you browse and preview the PowerFX online sound library. Playback can be synchronized in real-time with your host application, making it easy to hear sounds in context with a project before you buy! Once you've found what you're looking for, you can purchase selections via the PowerFX secure online server using your credit card. All your purchases remain marked and can be viewed, sorted and downloaded from within the plug-in whenever you want!

500MB+ of Apple Loops

319 royalty-free audio samples

Use with GarageBand + all music apps!

POWER FX

www.powerfx.com

PowerFX is a leading sound development innovator and content provider specializing in sampling products and sound effects for today's sound production projects. PowerFX licensors include Apple, Sonic Foundry, Cakewalk, Ableton Live, MOTU, Propellerheads, Steinberg, Sounds Good, Bias, Denon, IK Multimedia, Visiosonic, Voice Crystal, TC Electronics and Nokia. PowerFX sounds have been used in countless music, film and commercial productions.

Apple Disc Jams are custom, stylistic Apple Loops CDs for use with Apple's GarageBand and Soundtrack apps. They feature various instrument loops that can be combined to create complete musical compositions and the perfect addition to your GarageBand loop library!

Invincible Dance: A fresh collection of club- and dance-oriented loops featuring bass and drum loops to synth pads and FX loops.

NuJazz House: Authentic acoustic & electric instrument samples in the jazz vein, including drums, bass, electric piano, and min7 chords.

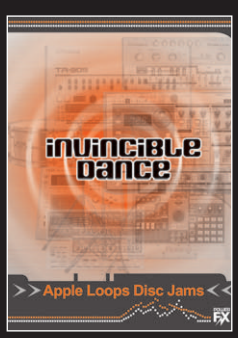
Electro Clashmatic: A combination of classic vocoder and electro-style beats & bass as well as modern synth & FX one shots.

Rock & Pop Trio: A huge, well-recorded collection of real acoustic drums, electric bass and electric guitar riffs, leads & rhythms in rock style.

Street Stylin: Features all the right sounds for hip-hop style compositions. Synth bass, funky guitar, synth leads and pads, vinyl scratch and FX, andbeats galore.

Studio Percussion: A broad, indispensable collection of beautifully recorded studio percussion that can be used just about anywhere.

In addition to all great Apple Loops DVDs and CDs, there are Apple Loops Sample Packs at the **Apple Zone**. These downloadable construction kits cover all kinds of styles and instruments that kick-start inspiration and help you get composing quickly. Visit **www.powerfx.com/applezone** for more info, and to listen to demos.



ProScore DVDs are premier music composition and sound effect libraries created for use with Apple's Final Cut Pro 4 and Soundtrack. Each DVD contains over 2,200 diverse, pre-formatted Apple Loops that provide film, video and audio professionals with a creative advantage that's economical and efficient. DV Composer's Toolkit is a complete musical composition arsenal with everything from urban and cinematic themes to Asian and Indian flavours. It features Soundtrack arrangements, ambiance textures, and hundreds of assorted instrument loops. Massive FX has everything you need to create authentic audio backdrops.

iTunes hits 50m mark

Apple has shifted over 50 million tracks since launching the iTunes Music Store on April 28 2003, the company has revealed. iTunes users are downloading 2.5 million songs every week, Apple said. Those tracks downloaded as part of the 100 million-song iTunes giveaway deal with Pepsi are not included in the figures, the company said.

iTunes Music Store offers over 500,000 songs from all five major labels as well as 300 independents. The service is currently open only to US customers.

Of the landmark Apple CEO Steve Jobs said: "It's increasingly difficult to imagine other services ever catching up with iTunes."

The news emerged as Apple's stock value hit a three-year high (see page 32), driven partly by reports that Apple's iPod mini is selling out across the US. In the week before iPod mini shipped, Apple announced that it had sold 100,000 units in pre-order sales alone. Apple took six weeks to sell 120,000 of the original iPod.

Apple CEO Steve Jobs said: "Crossing 50 million songs is a major milestone for iTunes and the emerging digital music era".

iTunes is also a strategic tool to help sell iPods in the short term. In the medium-to-long term it's Apple's hope that consumers will buy a Mac.

US reports show iPod minis are selling out everywhere. Apple's Web site warns of a one-to-three week wait for the iPod mini. Apple's marketing VP Greg Joswiak said: "People have to be patient. We're making them as fast as we can."

At press time Apple's European representatives were unable to confirm if the mooted April shipping month for the iPod mini will be met.

Of iPod mini sales in the US, J&R Music World senior merchandising manager Jack Wahrman told USA Today: "I've never seen a product sell like this. The iPod is a phenomenon."

Electrics retailer Tekserve owner Dick Demenus told the New York Daily News: "We're turning away a hundred people a day." Apple's new flagship retail store in San Francisco sold out twice in just 12 days, according to Bloomberg.

US market success for the product is confounding critics, who said Apple's $249 price tag was too high. Many pointed to the fact that the 4GB iPod mini costs just $50 less than the entry-level 15GB iPod, and concluded that most people would choose to spend the extra $50. However, the iPod mini does compare favourably on price with similarly specced rival MP3 players.

GartnerG2 analyst Mike McGuire said: "Consumers have a different view on pricing. When you see and feel the mini, it's amazing."

Thrivent analyst Jim Grossman said that the iPod "is a success beyond anyone's wildest expectations and it's driving store traffic".

Trustco analyst Patrick Kirksey said: "iPods mean Apple is picking up brand recognition in the broader market place."

Merrill Lynch senior vice president Steve Milunovich says iPods could generate an extra $1 billion in 2004 and $2 billion a year by 2006 for Apple, as it excites interest in its other products – the so-called 'halo effect'.

Momemtum should also be provided by HP, which in June will launch its own-branded iPod as well as bundling iTunes with its desktop and laptop machines and pushing it online. HP has also unveiled plans for aggressive expansion in China, announcing that it will open 1,000 retail outlets there, where it will push its digital lifestyle products – including HP iPods.

Outgoing Apple CFO Fred Anderson said: "The HP-Apple deal will get momentum behind establishing our digital music standard AAC as the digital music standard. We're not going to let anyone take our leadership position."

The issue of music standards is key for Apple. Its proprietary AAC standard – containing the FairPlay DRM system – is head-to-head with Microsoft's Windows Media Audio.

The 4GB iPod mini will cost £199 (including VAT), although Apple has said it will review this price before shipping. **MW**

Jonny Evans

Napster sets sights on UK

Napster is to begin its bid to become the top UK digital-music distributor despite having no major labels signed to its service at press time.

The company will launch its UK service "before the end of summer". It will offer UK-specific genres, promotions and content, all accessed at www.napster.co.uk.

The UK operation will be managed by ex-MP3.com executive Leanne Sharman, who is building a UK team. Napster CEO Chris Gorog said: "The UK is the largest consumer of music outside of the US and Japan, and in January digital downloads outsold physical CD singles in the UK; clearly establishing demand for world-class on-line music services."

Apple has played its European launch plans close to its chest, and offered no comment on the news.

BT deal boost

BT is introducing a scheme that lets customers temporarily upgrade their broadband service from 512Kbps to 2Mbps.

Apple top brass to address Macworld event

Apple's director of software product marketing in Europe Oren Ziv will speak at the inaugural Macworld UK Conference in London this May.

Ziv will discuss the Mac and how Apple works with the open-source community, as well as examining security issues and opportunities for new business.

The event takes place from May 17-18 at London's Barbican, and offers Mac users a chance to explore a portfolio of topics with a range of top Mac-industry figures. Other speakers include Macworld US editor Jason Snell and Macworld columnist Andy Ihnatko. For more information got to www.macworld.co.uk/conference.

A sleeker Panther

Apple has released a significant update for Mac OS X 10.3 Panther for both server and desktop Macs. Version 10.3.3 delivers faster start-ups, better networking, and Mail and Disk Utility boosts.

The Panther update has been in development since at least January, and the desktop version weighs in at 58.8MB. Among the improvements are networking and .Mac, DVD Player, application performance, and the Finder. The update is available through OS X's Software Update, as well as Apple's download site.

One key benefit is that users can expect significant improvements in start-up and shutdown times. There's good news for .Mac members, too, as they will enjoy much faster iDisk mounting, as well as enhanced wireless networking, and a greater number of supported third-party wireless networking cards.

The update promises better PostScript and USB printing. It supports more FireWire and USB devices, and includes the previously distributed Bluetooth 1.5 update and all available Security Updates.

A key improvement for workgroups is enhanced network browsing, with servers now appearing both on the desktop and in the Finder. You can also disconnect from a server using the Finder, or by dropping the server's icon on the Trash. Mac and Windows machines now connect better. Apple promises "improved file sharing and directory services for Mac (AFP), UNIX (NFS) and PC (SMB/CIFS) networks".

The included Safari 1.2.1 now supports more security dialogues that enhance the online-banking experience.

DVD Player now recognizes and plays DVD+R as well as DVD-R media, and Apple has improved Disk Utility.

Enhancements have been made to application support. Images now retain their characteristics when you import them in iPhoto, says Apple, and improvements have been made to Address Book, Mail and Image Capture.

System security is better. Apple has tightened up administrator procedures, closing the five-minute access opportunity that existed for multi-users following administrator-authenticated actions.

Fan controls in G5 Power Macs have been improved, while a separately downloadable update for G5 fans is also now available. Bluetooth has been enhanced, and Apple has introduced support for mLAN, a Yamaha version of Apple's FireWire standard built for musical-instrument networking.

The Mac OS X 10.3.3 Server Update (69.9MB) improves: Open Directory implementation; Network services; general networking – such as increasing the size of the Ethernet receive ring elements; File Services; System Imaging; Mail; Web services; QuickTime Streaming Server (fixing some potential vulnerabilities in this); Server Admin; and printer and finder functions.

Writing on a variety of forums, those who have installed the update recommend repairing disk permissions (using Disk Utility) before and after installing it. Apple recommends all users install it. **MW**

Jonny Evans

Improved Panther

Among the most-welcome benefits offered by Mac OS X 10.3.3 will be faster iDisk mounting (below) and Server icons that appear on the desktop as well as in the Finder (above).

DVD Studio Pro hits 2.0.5

Apple has updated its professional DVD-authoring software DVD Studio Pro to version 2.0.5. The update requires that DVD Studio Pro 2.0.x be installed. Brief notes on the release from Apple say that the update "includes critical fixes for the placement of the dual-layer break-point on DVD-9 titles".

System requirements for the update include 733MHz G4 or faster with an AGP card; 8MB video memory (although 32MB is recommended); at least 256MB RAM; 20GB hard-drive space; a SuperDrive; Mac OS 10.2.6; QuickTime 6.4 and DVD Studio Pro 2.

The update is available using Mac OS X's Software Update or from Apple's Web site, although a form must be filled in first.

Apple admits issue with noisy G5 desktops

G5s are creating a real

Apple has admitted that a number of customers are experiencing noise issues with their Power Mac G5s – almost exactly a year after the company acknowledged similar problems with the Power Mac G4.

The admission followed the leaking to Macworld of an Apple memo to UK resellers highlighting the issue. The memo suggested ways in which noise associated with the dual-1.8GHz Power Mac G5 could be cut.

A couple of explanations for the noise – described alternatively as a 'high-pitched chirrup' and a 'buzzing' – are highlighted in the memo.

The noise is either acoustic or digital, according to Apple. Acoustic noise comes from the power supply. To check whether this is the case Apple recommends disconnecting peripherals to establish that the noise is coming from the power supply. Apple will replace the power supply, although it states in the memo that "this will reduce but not eliminate" the noise. The company has not officially confirmed a power-supply replacement programme.

Reports suggest that noise is related to fluctuations in power draw, with noise occurring when the processor is idling or when there is network activity.

A number of affected G5 users say on Apple's forum pages that the noise is associated with power-hungry activities. One user states: "My otherwise extremely quiet G5 exhibits a high-pitched whine when I'm working certain apps. Whenever I move the mouse while working in Dreamweaver the whine starts. It also happens infrequently in iTunes."

To reduce the noise Apple suggests changing the energy saver setting to Highest. This will cause the processor to idle less, but will not completely remove the noise and fan noise will increase.

Digital noise, meanwhile, can be heard in the audio output of external, self-grounded, AC powered devices connected to the G5 via the sound-Out port, USB, FireWire or the PCI bus. Apple suggests this problem is due to improper grounding of external devices, and says using isolation transformers on either or both the signal and power cables will eliminate this problem.

Apple has produced a tech note on ground loops. These can be created by audio-signal cables or mains cables, and cause hum.

Apple suggests this could also account for the noise coming from the G5, although one G5 user on Apple's forum states: "The chirping has nothing to do with ground loops. Ground loops are hums caused by AC currents. I can hear the chirp when my G5 is stand-alone, with nothing attached to it. The sound comes from the computer, and the FireWire sends it to my audio gear."

Parc-founder Pake, 79, dies

George Pake, founder of Xerox's Palo Alto Research Center (Xerox Parc), died of heart failure on March 4, aged 79.

Pake's Parc revolutionized modern computing. Its user-interface work inspired Apple to create the Mac. Among other innovations Xerox Parc developed are laser printing, Ethernet networking and client-server architectures.

Twenty years ago Apple took Parc's graphical user interface (GUI) out of the labs and into the public eye with the Macintosh. GUIs are now commonplace across computer platforms.

Pake ran the facility from its launch in 1970 until 1978, when he became Xerox vice-president of corporate research. For the last 16 years of his career he was director emeritus at Xerox's Institute for Research on Learning.

Before Xerox, Pake was a leading nuclear physicist and was provost of Washington University.

Parc's president and director Mark Bernstein said: "George Pake created a culture of innovation that has endured at Parc for more than three decades".

QT leads to shining Pathe

The British Pathe news archive is being digitized into QuickTime format so schoolchildren can download the clips for use in their iMovie projects.

The archive is already available in Windows Media format, but that format is not editable. Available footage includes the Titanic, D-Day landings and the great sporting and celebrity events of the time. Founded in the 1890s the archive now offers over 3,500 hours of video and over 12 million still images. The move to take this massive archive to Mac has been funded by the Regional Broadband Consortium, which exists to help boost the quantity of high-resolution online content available to schools, and reflects the growing adoption of Apple products by UK schools in their ever-increasing experiments with digital video in education. Marketing director Peter Fydler explained that the introduction of QuickTime 6 with its industry-standard MPEG-4 support made the task possible.

The Mac-friendly QuickTIme-based Web site archive is expected to launch in Easter 2004. Schools will enjoy unlimited use of the high-res downloads, while individuals will have to pay a small fee for those clips. MW

Image Captions
(All copyright British Pathe archives). John Lennon (top) at the opening of the Apple Shop in London at the end of 1967; Salvador Dali (middle) in Paris posing for the last ever Pathe Newsreel (1970); Two unidentified soldiers (bottom) after their rescue from Dunkirk (1940)

buzz

Another Apple forum user suggests a simpler solution: "I relocated the G5 to under my desk which stopped the chirping in my ear".

According to Apple the noise issue with the dual-1.8GHz G5 Power Macs "has been fixed in production" and therefore future models should not experience this problem.

■ Apple has posted a page flagging-up its iBook Logic Board Repair Extension Programme. This follows threats of a class-action by angry iBook owners who had complained of logic-board failures.

Apple has agreed to cover the cost of repair or replacement of failed logic boards in specific iBook models manufactured between May 2002 and April 2003. Relevant iBooks have serial numbers ranging from UV220XXXXXX to UV318XXXXXX.

Those with either iBook or G5 issues should contact AppleCare UK Contact Centre on 0870 876 0753. **MW**

Karen Haslam

Xserve G5s hit by delays

The shipping date for the Xserve G5 has slipped from February to March, Apple has confirmed. The company first announced the new Xserve in January at Macworld Expo San Francisco.

Apple confirmed the delay in an official statement released to Macworld: "We've received an incredible amount of customer interest for the new Xserve G5 1U rack-mount server since it was announced at Macworld Expo.

"We're working hard to start shipping the new Xserve systems in March 2004, not by the end of February as originally announced."

Apple declined to explain the cause of the delays but speculation on Mac rumour sites suggests it is related to cooling-system problems, quality-control issues or production difficulties.

Xserve G5 is the first Apple product to exploit IBM's award-winning PowerPC 970FX processor. This offers the best G5 performance yet, operating at higher clock-speeds but lower temperatures.

The new G5 processor meant Apple was forced to sacrifice one of the four hot-pluggable Xserve drive bays in order to build-in a cooling system to avoid overheating.

Xserve G5s use a copper-heatsink design and eight individually managed fans that provide airflow for cooling the system. There's a dedicated fan-control processor within the machine that contains eight sensors that watch temperature.

The 970FX (G5) processor is a highly advanced piece of engineering that Microprocessor Report editor-in-chief Peter Glaskowsky thinks gives Apple an advantage over PC manufacturers using AMD or Intel chips. "The processor has put Apple back among the leaders of the PC speed race and given it a chance to win greater sales," he said.

The company has high hopes for Xserve. It offers 60 per cent better performance than the previous generation of G4 Xserves with "over 30 gigaflops of processing power per system" claimed by Apple. The UK Apple Store currently shows a 5-7-week wait until Xserve G5s (in all configurations) ship.

■ UK Mac resellers have confirmed they continue to expect new Power Mac G5s in March. Rumours suggest they will offer dual-processors across the range and max-out at 2.4GHz. Visit www.macworld.co.uk for up-to-the minute Mac news.

Tech events diary 2004

NAB 2004
April 17-22
Sands Center, Las Vegas. The largest exhibition for broadcast, video, and effects producers.
www.nab.org/conventions/nab2004/

Seybold Seminars
April 18-21
Amsterdam. Event for media-technology pros.
www.seybold365.com/

Drupa
May 6-19
Düsseldorf. World-market print and publishing show.
www.drupa.com

Macworld Conference 2004
May 17-18
The Barbican, London
Macworld is bringing the Mac conference to the UK for the first time.
www.macworld.co.uk/conference

The Broadcast Production Show
May 18-20
Olympia, London
The UK's largest production and broadcast exhibition.
www.productionshow.com

AppleScript Training
May 25-27
Uxbridge, Middlesex
TecSoft's intensive training course.
www.tecsoft.com/ascourse.lasso

Internet World 2004
June 15-17
Earl's Court, London
Premier UK show for Internet and IT-related markets.
www.internetworld.co.uk

MacExpo Deutschland
June 17-19
Cologne. the German Mac show.
www.mac-expo.de

■ **For more events info go to** www.macworld.co.uk/events

Fresh start for PowerPC

Motorola has announced a new G4 PowerPC processor that might appear in a future Apple notebook.

The new processor (MPC7447A) could well be used by Apple as an interim measure to power a new PowerBook iteration as the company's engineers work to solve the overheating problem that is inherent in using G5 chips in notebooks.

Motorola's MPC7447A is a "high-performance, power-efficient 32-bit RISC device, operating in excess of 1.4GHz", the company said. It's the latest version of the processor used in G4 Macs, and is compatible with previous G4s, meaning Apple can employ the same motherboard seen in existing products in order to bring product to market speedily.

Motorola's 130nm chip consumes just 20W of power at 1.42GHz, with top speeds of 1.5GHz. It offers on-chip power management, so CPU speeds can auto-click into a low-power mode when required – though the company claims speeds of 1.5GHz are possible. The processor contains temperature sensors that monitor CPU temperature, to prevent meltdown.

IBM's 90nm PowerPC 970FX (as used in Apple's Xserve G5) requires 24.5W at 2.0GHz, and 50W at 2.5GHz. At the low-end it uses 12.3W at 1.4GHz.

Motorola claims its new chip can issue four instructions per clock-cycle to 11 independent execution units.

Other features include: 512K L2 cache on-chip, full symmetric multiprocessing support, a 64-bit interface, and a full 128-bit implementation of the AltiVec/Velocity Engine.

Hardware designers are forced to consider power management when developing notebooks. The more power a processor needs the more power the battery must deliver, and battery life reflects this. Hot processors need to be protected by increasingly complex cooling systems, which can impact on the product's weight and size.

As processor speeds climb, the focus for product development is moving away from GHz to temperature control. In-Stat/MDR senior analyst Eric Mantion said: "There seems to be a fundamental shift in how processors are used outside the server and PC markets. Developers don't just care about computational abilities but also the ratio of performance to power consumption."

Though all Apple products may yet migrate to IBM's G5 architecture, its G4 products continue to sell: 623,000 G4 Macs and 206,000 G5 Power Macs were sold in Q1 2004.

Apple's vice president of hardware product marketing Greg Joswiak told eWeek that rumours of the demise of the Apple-Motorola relationship are "exaggerated".

The historic link between the two goes back a "long, long time", he said. "Most Apple products are powered by Motorola. We see the relationship continuing," he said. **MW**

Jonny Evans

PowerPC chip is ten years old

March 14 marked the 10th anniversary of Apple's first Power Mac, which started the move from Motorola's ageing 680x0 processors to a new architecture created by Apple, IBM and Motorola.

Driven by RISC (Reduced Instruction Set Computing) technology that was more sophisticated than the CISC-based 680x0 and Intel's x86 and Pentium chips, the first Power Mac range consisted of three basic machines running PowerPC 601 processors.

The entry-level Power Mac 6100 in pizza-box-type case ran at 60MHz and boasted 8MB of RAM and a 160MB hard disk for £1,499 (excluding VAT). The desktop 7100 started at £2,299 for a 66MHz 601 chip. And the top minitower Power Mac 8100, running at 80MHz and with 16MB of RAM and a 1GB hard disk was priced at £4,677.

Snaps clinics

Rapid Group is holding two free digital photography and print workshops, one in Bournemouth April 7, the other in London April 14.

The events run from 12.30–7.30pm and will feature a two-hour in-depth Adobe Creative Suite training seminar by Photoshop guru Guy Gowan. Apple will offer a look at its latest equipment and Epson, HP, Xerox and Extensis will discuss their solutions for photographers and designers. Call 0845 330 1600 for details.

74% of Apple's global customers are satisfied with its customer service – 12% higher than its nearest rival. (Source: www.consumerreports.org).

Euro reprieve for file sharers

Individual music-file sharers won a reprieve when the European Parliament chose to drop a clause in new intellectual property rules that threatened them with dawn raids and confiscation of goods.

The Parliament passed its directive on the enforcement of intellectual and industrial property rights in March. It's an attempt to agree IP laws across the Union, as it must be added to local state law within two years. Proponents say it will help combat counterfeiting and piracy of software, toys, music – even Viagra and football shirts.

MEP Janelly Fourtou, wife of Vivendi Universal CEO Jean-Rene Fourtou, spearheaded the law. The law's original wording was clarified to apply only to commercial, not private, copyright abuse.

However, civil-liberty campaigners remain concerned. IP Justice head Robin Gross told AP: "The proposed directive would allow recording-industry executives to privately invade the homes of file sharers to gather evidence for civil prosecutions."

Clarification that the law applies only to commercial piracy means "individuals copying music recordings for their own use would not 'normally' be penalized," a European press representative said.

The exclusion of individuals from the law may be only a reprieve, Internal Market Commissioner Frits Bolkestein warned: "We will look into further measures providing criminal sanctions to piracy in due course."

Jonny Evans

Michael Bull – the world's leading authority on the impact of personal-stereo devices – talks iPod with KAREN HASLAM

iPod success academic

For Apple to maintain the iPod's market share it must look closely at how people use the device, according to the world's leading expert on the social impact of personal-stereo devices, Dr Michael Bull.

Bull, a lecturer in media and culture at Sussex University, began investigating personal-stereo use in 1993 – the first to do so.

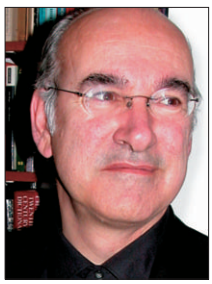
He told Macworld: "Sony was lucky. The Walkman sold very easily and took off so quickly that it never felt the need to spend any money examining the market for the device."

However, despite buoyant sales Bull recommends that Apple "pays careful attention to the market for the player, especially if it wishes to maintain its market share".

Bull says that misreading how the market uses a product can spell disaster for a manufacturer. "Nokia demonstrated a misunderstanding of how people feel about personal stereos when it commissioned an advert of a girl standing on a Tube platform getting so lost in her music that she missed her train.

"When people are listening to personal stereos they like to be in control of their situation. Showing someone being out of control was a big turn off."

Bull says the iPod is "the new Walkman". He added: "it's the same technology 20 years on. The difference is the amazing scope that the iPod has."



Stereo expert
Dr. Michael Bull

Through his research Bull has identified various elements of personal-stereo use, many of which have parallels with the iPod. These are published in his book Sounding Out The City (see above, right). Bull is currently working on a second book that will include a study of the way people interact with their iPods. It is due to be published next year.

In Bull's initial research, one interviewee said: "I spend quite a while thinking what tape to take with me, and it really gets me annoyed because if I'm in a rush I think: 'Take anything. You like them all! They're your tapes.' But I can't. It has to be something I really want to listen to. I wouldn't like to take something that would change my mood. It has to be something that would fit my mood."

Bull said: "A personal-stereo user might select three or four tapes to ensure they had the right music. With the iPod you have all your music at your fingertips so you'll always have something to match your mood.

This shows what miniaturization and the digital revolution have done for time management."

iPod owners may have the luxury of being able to carry their CD collection with them, but iPod owners still spend time constructing the perfect playlist.

In his book Bull describes how personal-stereo users construct "familiar soundscapes to accompany them though their urban journeys".

He explains: "The use of a personal stereo represents something that is both individual and intimate. It helps them maintain a sense of identity within an often impersonal environment." Bull believes that iPod users also use their music to help them maintain their identity in alien environments.

He says the iPod will change the way music is listened to in a

.Mac discount

Apple UK is offering purchasers of new Macs a £20 discount on their .Mac subscription.

The deal – called Extend your Digital Life – means anyone buying a new Mac between March 4 and June 1 2004 can claim the £20 discount on a .Mac subscription. The deal is available from Apple and participating resellers.

To qualify customers must buy their Mac and their .Mac subscription at the same time. "Purchases made without simultaneously ordering .Mac cannot be honoured retrospectively," the company says.

Apple in discord with music giants

Apple is facing two high-profile iTunes law suits – from singer Eminem and The Beatles. The Beatles case opened recently in London's High Court with a typically British twist, as Justice Edward Mann revealed himself as an iPod owner.

Judge Mann asked if he was disqualified from hearing the case because of his iPod ownership, to which Lord Grabiner QC representing Apple, said: "I'm delighted to hear that. We would perhaps have sent you one for free if that would not have been improper."

Apple Corps, the company that looks after the interests of the surviving Beatles, is accusing Apple Computer of contravening an earlier deal dictating that Apple Computer does not become involved in music. Apple Corps says that its iPod and iTunes products contravenes this agreement. Apple says it has not contravened the logo agreement because it has the right to use it for data transmission. It is claimed that a deal struck in 1991 meant Apple Computer could use the Apple logo for computers, and data telecoms, but only Apple Corps could use it for music.

■ Meanwhile US rap star Eminem filed suit against Apple and MTV over alleged misuse of one of his songs in an ad for the iTunes Music Store.

Eminem and representatives from his publishing company are suing Apple over the use of his Lose Yourself track.

The ad featuring the track starred a child singing the song, and ran on MTV for three months from July 2003. The ad was also available on Apple's Web site.

Asked by Apple to "rethink" his position Eminem told the company to "Lose Yourself", ending negotiations. MW

way that the personal stereo couldn't. "It's likely that you'll be more selective about what you listen to, perhaps only listening to three or four tracks on a CD – the ones you really like. There may be other tracks on the CD you never listen to. You may even delete them."

As a result of this Bull thinks the iPod will make music "more transitory". He said: "If you have that much music there's going to be a lot that you never listen to. You'll have your favourites, but a lot of the stuff you'll delete. This works against spending lots of money on albums.

"Because the technology generate the opportunity for almost infinite choice the music is going to have to be very cheap.

"The most serious challenge will be trying to get people to purchase music at all. Most of the people I've spoken to who have iPods are downloading music illegally."

Bull suggests Apple and the music industry should rethink the pricing of downloads. "The cost of downloading a song is too high. An iPod can take many tunes, so essentially people are going to go for the cheapest option, which is not to pay. It doesn't bear thinking about how much you would have to spend to fill an iPod that way."

Another issue that Bull says needs addressing is compatibility. A digital-music format war is emerging between AAC – incorporating Apple's digital rights management (DRM) system FairPlay – and Microsoft's Windows Media Audio standard.

Bull said: "The problem of DRM could be Apple's limitation. It's a structural constraint they can't get around. Given its minority position in the computer market it can't afford to make any mistakes."

Apple also needs to keep an eye on technological advances, says Bull. "Mobile-phone manufacturers will incorporate iPod-like devices in their products, and then Apple will find itself under threat, unless it moves into the mobile-phone market, or does a deal with a phone company."

Buoyant market

Bull thinks the market for the iPod will increase, and that the addition of the iPod mini is shrewd. "Apple is being sensible by diversifying. It will hit all the buttons on an expanding market, and it's ahead of the game.

"The iPod mini will be successful, but is very much a lifestyle choice. It's ideal for sport and fashion, in the same way that people go for the smallest mobile-phone possible.

"But the smallest can often be the most difficult to use. How small can something get before you can no longer use it? It's true that small is beautiful, but if a slightly larger machine is just as beautiful people will opt for that."

Many of the iPod users to whom Bull has spoken have selected higher-capacity models, or are about to upgrade to one – so creating a niche market for the iPod mini. "That market will not extend to the normal iPod user because capacity is too important to them," says Bull.

He added: "I do not believe this niche market is made up of women. There is an assumption that women like pretty things in pretty colours, but women are just as likely to be computer literate and technically oriented as men."

Nor does he believe the iPod mini fits in a price bracket that will make it affordable to the teenagers to whom the iPod is being marketed. Of the advertising campaign Bull said: "Given the iPod's price it seems silly to advertise it to a youth market."

His sentiment is echoed by marketing experts. Media Week senior editor Mike Butcher said: "Targeting youth makes sense from a prime-marketing perspective but because the iPod is not the cheapest player around this would suggest the market is actually a bit older."

Bull thinks the real challenge to Apple will come down the line, following a period of "massive growth". He said: "It will be like it was with the Walkman, and more recently with the mobile phone. There will come a time when the market is exhausted, and then the real fighting will begin.

"But Apple won't have to worry about that for a while, as sales will rise exponentially over the next few years. MW

ON THE CD

AudioFile Engineering's Sample Manager is a batch audio-processing utility for OS X. It offers extensive file format support – AIFF, WAV and Sound Designer II audio files are supported. ACID, Recycle and Apple Loop formats are partially supported.

The utilities features include detailed file and audio info, MIDI playback of selected audio, and unlimited Undos and support for any sample rate or bit depth.

Batch processes include Change Gain, Fade, Trim, Reverse, Convert, and Process with AudioUnit.

This version will run without limitation for 15 days. Registration costs $49.

www.audiofile-engineering.com

Mac history's Folklore

10 great Mac Folklore stories

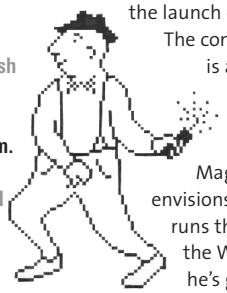
- **Mac engineers force Sony Technician into a closet to hide from Steve Jobs.**
- Steve tries to woo Bo Derek with a free Mac.
- **Bill Gates comes to see the Mac for the first time, and Steve has to shout at one of the Apple engineers to "shut up!".**
- Apple planned to create a Mr Macintosh – a mysterious little man who lives inside each Mac and pops up every once in a while when you least expect it, winks at you and disappears again. Pictured below.
- **A brief history of desk accessories: how the Mac got its mini apps, such as the Calculator and Key Caps.**
- Jobs estimates the effort that went into QuickDraw as 24 man-years – figuring that one Bill Atkinson year equalled six normal man years.
- **Steve Jobs and Rod Holt decide to change the name from Macintosh to Bicycle. It didn't last…**
- The very first image on the very first Macintosh was of Scrooge McDuck.
- **Where the Mac user interface really came from.**
- How Apple got the unusual symbol (⌘) used for the menu Command key from Swedish campsite iconography.

Original Mac team member Andy Hertzfeld has set-up a Web site called Folklore (**www.folklore.org**) that features dozens of first-person accounts of the early days of the computer – all written by the very people who created the Macintosh.

The stories themselves are fascinating and include such gems as the origin of Steve Jobs's "reality distortion field" (Bud Tribble coined the term, likening Jobs's fierce brand of optimism to a Star Trek force field); a bold statement Jobs made to Adam Osborne, the creator of the first "portable" computer; and Bill Gates's shameful past as the programmer of a particularly embarrassing DOS video game.

"I've been telling friends and coworkers anecdotes about the original Macintosh development for the last 20 years," Hertzfeld told Macworld. "It was satisfying to finally write some of them down."

Hertzfeld had been kicking around the idea of Folklore.org since 1996, but it was the 20th anniversary of the Mac (and a desire to do some programming in the Python scripting language) that was the impetus for the launch of the Web site.



The content of Folklore.org is a treat in itself, but Hertzfeld (who also co-founded Radius, General Magic, and Eazel) also envisions the system that runs the site as a gift to the Web community; he's going to release the

Folklore software this spring so other people can set up similar sites of their own.

He hopes it will join some other landmark Web technologies, such as Slash (featured most famously at Slashdot.org) and the Weblog tools Blogger and Moveable Type, as one of the building blocks of the Web.

Subjective reality

When I first saw Folklore.org, I'll admit that I wondered just how reliable any story could be 20 years after the events described. But Hertzfeld's got a good answer: he freely concedes that history is subjective, that memory is a funny thing, and that different people can honestly have different recollections of the same events.

So all of that figures into Folklore's design – conflicting accounts can live together in the system, providing readers with multiple viewpoints of the same historical event.

Hertzfeld says the reaction from his former colleagues "has been uniformly positive."

Several of them, including programmer Steve Capps and icon designer Susan Kare, have contributed stories to the project. "Even Steve Jobs told me that he liked the site," Hertzfeld says. **MW**

Jason Snell

Ive: 'iPod could have been a banana'

Apple's head of industrial design Jonathan Ive has won yet another design award, this time from UK design magazine, BluePrint. Ive and his team at Apple won in BluePrint's 'Product Designer of the year 2004' award. Ive's success was declared to a packed awards party in East London.

With readers invited to nominate winners the top three designers were placed on the shortlist for award and asked to nominate an advocate to speak for them during an election event. Ive chose notorious Mac evangelist Stephen Fry to fight his corner.

Fry said: "Good product design should be judged by the 'lick' test and whether it gives you a stiffy". He observed, "Apple delivers on both counts." Jonathan Ive was up against Tord Boontje and Marcel Wanders.

Apple gets fruity

Speaking to the Sunday Times in March, Ive said the iPod could have been banana-shaped and still have succeeded. He was talking about how Apple conceives of and creates new products.

"It's about trying to take a leap from your understanding of it [the object] to [being] someone who doesn't have an understanding and who, quite rightly, doesn't care."

Of the iPod, he said: "It takes a real confidence in design to be happy to get design out of the way, and not be constantly wagging your tail and saying, 'Look, it's been designed'. Because it's about listening to music, and that's what's important."

Of the iPod mini – which ships in Europe in April – Ive said: "They're nice, aren't they? Especially when the backlight's on.

"A lot of products only work at one distance. This has an interesting icon that people now understand is synonymous with the iPod. But I think that, as you get it closer, there's a resolution and detail that's pretty intriguing." **MW**

Aspyr well down Ring road

ON THE CD

■ **Scruffy Gems is a $14 title featuring cartoon pup Scruffy, who's trapped inside a flooding basement. To save his life Scruffy must swap gems from a disorderly grid into tidy rows and columns in matching colours. Requires Mac OS X 10.0, or above.**
http://danlabgames.com

■ **Trisection takes Tetris to a new level by replacing its rectangular grid with a grid made up of equilateral triangles. Trisection requires players to complete coloured areas as well as shapes. It adds new colours and new triangles to keep the action challenging, as players wend their way through a game. The game costs $15.**
www.sticksoftware.com

■ **Starbase Defender pits players into a battle to protect their starbase from waves of hostile aliens. The developers promise the classic-style shoot 'em up is "sure to have you rotting your brain as you mindlessly blast the baddies and save the universe".**

The $20 title requires Mac OS 9.2.2 or OS X 10.2.8 or better, and a 266MHz G3. Players fend off 70 waves of assault, with 18 enemy types, each of which has its own unique attack.

Game developer Bigger Planet has focused on giving this arcade-style game an 80s retro feel, and has made the controls easy to use – yet difficult to master.
www.biggerplanet.com

Aspyr's Mac port of the game of the movie of the book that is The Lord of The Rings: The Return of the King has entered beta, with work progressing well, company sources said.

The game was released for PC by Electronic Arts in mid-March. Its aim matches that of the movie: players must cast Sauron's cursed One Ring into the fiery Crack of Doom to free people from the evil that threatens all.

Players get to travel through multiple gameplay paths, taking control of the heroes of the books/movies. Defend the walls of Minas Tirith as Gandalf, raise the Army of the Dead as Aragorn, Legolas, Gimli, and with Frodo and Sam deliver the ring to the fiery depths of Mount Doom.

Gameplay includes "immersive action and adventure elements set in rich, interactive levels", the developers say. Multiplayer gaming is supported, so players can form and play their own Fellowship of the Ring.

Eight playable characters include: Gandalf, Aragorn, Legolas, Gimli, Sam, and Frodo (with two secret characters to unlock, voice-overs supplied by the actual movie actors).

The game offers over 12 environments, including the Paths of the Dead, the defence of Minas Tirith, the battle with Sauron's forces in the Pelennor Fields at the Black Gate and the Crack of Doom. Monsters include the giant spider Shelob and the chief of Sauron's Nazgul fliers.

Additional features include support for game control sticks, a musical score composed by Oscar winner Howard Shore, and exclusive never-before seen movie footage.

When it ships, the game will be among the first from Aspyr to require a DVD drive to install and play. It will need Mac OS X 10.2.6 or later and a G4 or G5 processor running at 800MHz or above.

Aspyr recommends that customers of all its games upgrade to Mac OS X 10.3, as many of its titles are Panther-optimized. The company also recommends upgrading to 512MB or 1GB RAM.

In related news, the final Expansion Pack for Aspyr's The Sims series, The Sims: Makin' Magic, is available now. **MW**

Feral controls input

Feral Interactive has released a software calibrator that enhances gamers' control over input devices, and has also released a slew of updates. Feral's Input Calibrator can be used to calibrate non-Apple gaming devices, such as joysticks, gamepads and steering wheels. It lets them set the upper, lower and mid-points of their devices to match their preferred gaming ways. These settings are saved inside a global data file that any game supporting the file format can read.

Some gamers won't need the software because it's included with certain Feral game updates, such as Rayman 3 and Total immersion Racing. A patch that comes with Rayman fixes game-freezing issues, while an update for the latter addresses graphics and sound problems. Recently released updates for Ghost Master, Warrior Kings and F1 Championship Season 2000 don't ship with the calibration software, but do fix a number of small glitches and bugs. Feral has also posted an 8MB two-minute movie trailer for its forthcoming first person shoot 'em up, XIII.

Shift off a shovel

Rally Shift from CodeBlender Software offers Mac gamers a chance to take the driver's seat in a high-performance rally car. The full version of the game is equipped with a variety of rally courses and cars, though you only get to choose between two vehicles and one race track in the demo on Macworld's CD. The game's computer-controlled opponents operate at different skill levels. The game supports two-person play on one Mac, and has its own physics engine to reflect the rally driving experience. The full game costs $25, and ships with five racetracks. Additional tracks and game upgrades are promised as free downloads.

The company recommends an 800MHz G4 or better with a current graphics card and 512MB RAM.

www.codeblender.com

iPod minis drive snappers wild

Fat-pipes offer from Telewest

Telewest has announced its new low-cost 256Kbps broadband Internet service, and is accepting pre-registrations.

The company will charge £17.99 per month, and will launch the service this spring. Because it's a cable-based service, this always-on connectivity solution does not tie-up existing phone lines.

Telewest already offers 512Kbps, 1Mbps and 2Mbps broadband services.

Telewest director of Internet services Chad Raube said: "We're expecting demand from people who have previously considered broadband a big leap from dial-up. Now getting on to the first rung of the broadband ladder will become a no-brainer."

The first 5,000 people to pre-register for the new services through Telewest's pre-registration Web site will get free installation and their first month free. Installation usually costs £50. The service is subject to a 12-month contract.

Telewest expects customers for this service to generate no more than 750MB of data traffic each day. Users exceeding that may be asked to migrate to a higher-bandwidth service.

Telewest Broadband

Apple's iPod mini isn't just a huge hit among music lovers – digital photographers are also turning to the product to cannibalize it for the 4GB Hitachi Microdrive it contains.

The 4GB microdrive inside the iPod mini is encased within a CompactFlash body, so many digital-camera users want it for use inside their cameras. Why? Because such a card costs $499 at US retail, while the iPod mini costs just $249.

But the investment doesn't always pay off. iPod mini cannibals can't make the cards work once they have been removed.

Hitachi's global storage technologies media relations head Kim Nguyen told Macworld: "The Microdrive might not work once it has been extracted from a third-party consumer device. These embedded Microdrive products are designed to different specifications than stand-alone Microdrives, and are not optimized for removability." She also warned that extracting the drive might damage it.

Nguyen stressed that her company's $499 pricing for the hard drive at retail as a stand-alone item is "a suggested selling price only". She added: "Stand-alone Microdrive products provide additional value over embedded products used in consumer electronic devices in their ability to be removed and used in a variety of different devices.

Embedded Microdrive media is designed only to work in the device for which it was originally intended."

iPod Web site iPoding said an Apple insider had told it that Hitachi has disabled CompactFlash support in the Microdrives supplied to Apple for use within iPod mini.

Nguyen told Macworld that Microdrives were specifically developed for consumer electronics devices such as digital cameras. "Today, a number of customers in several consumer electronics market segments are working with us to help us define market requirements for new generations of Microdrives."

The drives that ship embedded within devices are custom-built for Hitachi's OEMs, and the features available inside the drives may not be as complete as those available at retail.

"Some of the drives we ship today are used by consumers in products such as digital cameras as removable storage. In other cases, the drives are designed inside devices such as MP3 players where the drive is not meant to be removed by end users."

Hitachi expects the market for its drives to increase, particularly as the product sees adoption in new consumer-electronics (CE) markets.

"A key consideration in the MP3 market and other CE market segments is the ever-growing need for high capacity in small hard-drives. Hitachi is very well positioned to meet the needs in the market for MP3 players."

Hitachi is developing a version of its one-inch Microdrive that's designed to be built directly into the guts of devices such as iPod mini. "The miniaturization of the hard-disk drive is fuelling consumer change," said Bill Healy, senior vice president of consumer and commercial hard-disk drives at Hitachi.

Jonny Evans

It's a fair copper, says IEEE

The Institute of Electrical and Electronics Engineers (IEEE) has approved a standard for 10 Gigabit Ethernet over copper. The new 802.3ak standard will be implemented as 10GBase-CX4, providing 10Gbit/sec over dual twinaxial cables, similar to the cabling used in Infiniband networking.

This is the first copper Ethernet standard not to use category 5/6 cabling technology. It will be capable of connecting clusters within 15 metres of each other, and will be more affordable than the fast fibre-based 10G ports which cost more than £7,000 each.

"We expect installation costs for copper 10GBase-CX4 interconnections to be one-tenth that of 10GBASE-optical solutions," said Dan Dove, chair of the 802.3ak Task Force.

Ten Gigabit Ethernet was originally designed as a long-haul carrier technology, but as enterprises began showing interest in 10G, and carriers cut back spending during the telecom bust, interest began to grow in a short-haul version of 10 Gigabit for switch-to-switch interconnects.

Apple's Power Mac G5s and PowerBook G4 systems currently employ 10/100/1000 BaseT Ethernet. iBook, iMac and eMac computers network via 10/100BaseT Ethernet.

Phil Hochmuth

Relief for Web pros on Eolas

Web professionals have been given a reprieve, after the US Patent and Trademark Office rejected the validity of the Eolas patent for embedding interactive elements into Web sites.

The patent, which belongs to Eolas Technologies, was central to an infringement judgement against Microsoft last August. Microsoft was found guilty of infringing the patent, and told to pay $521 million in damages.

The terms of the patent could require Web sites and Web-authoring applications to implement changes to avoid contravening the patent.

The patented technology was developed by Eolas president Michael Doyle at the University of California. It is described as being "a system allowing a user of a browser program... to access and execute an embedded program object, or small computer programs, often referred to as applets or plug-ins.

Following that judgement, Apple released a slew of developer notes for Mac users, warning them of how to make required changes to their sites in order not to offend the patent. Macromedia released similar developer notes, and Microsoft promised changes to Internet Explorer that may "affect many existing Web sites".

In November the patent office decided to review the patent after W3C director Tim Berners-Lee wrote to US Under Secretary of Commerce for Intellectual Property James Rogan. Lee urged the Patent Office to invalidate the 1998 patent due to the existence of "prior art", or previous examples of such use.

He said the patent could cause "substantial economic and technical damage to the Web", and warned: "The existence of the patent compels many developers of Web browsers, Web pages, and many other important components of the Web to deviate from the fundamental technical standards that enable the Web to function as a coherent system."

Berners-Lee argued that object-embedding technology covered by the patent has "been part of the HTML standard since the early days of the Web."

A W3C briefing warned: "Changes forced by the patent will have a permanent impact on millions of historically important Web pages."

Berners-Lee

Banging the standards beat, Berners-Lee said: "The enormous expense and the more general threat the patent poses to the Web community is completely unwarranted because the patent is, we firmly believe, invalid in view of the prior art described."

The US patent office has conducted only 151 such re-examinations since 1988, despite having issued nearly four million patents in that time, said Microsoft spokesman Jim Desler.

The decision isn't final. Eolas and the University of California have two months to respond, and will have a number of avenues of appeal, including the courts, if their claim is ultimately rejected – and the University of California plans to exercise its rights, says its new-media director Trey Davis. "In the trial Microsoft had tons of money and time to present its position on various prior art. That was rejected by the jury."

The patent office examiner referred to a "seminal" paper and a number of extensions to the HTML (Hypertext Markup Language) "embed" tag that suggest that the university's technology may have been previously implemented and is, therefore, not patentable.

Robert McMillan, Joris Evers

Building site
Embedded interactive elements on Web pages have become a key component of today's Internet, and the Worldwide Web Consortium (W3C) was keen for a rethink on the Eolas patent because of its far-reaching impact.

Xbox Next in line for G5s

Microsoft has elected to equip its next-generation Xbox Next with 64-bit IBM processors similar to those used in Apple's Power Mac G5s.

A The San Jose Mercury News report claimed "Microsoft has quietly circulated the specifications for its next-generation Xbox video-game console".

The Xbox Next will reportedly use three 64-bit processors, giving it "more computing power than most PCs."

A benefit of switching architectures is the ability to use a wider data path, enabling more information to be processed at once. According to the report, the Xbox Next will use a graphics chip designed by ATI. The original Xbox used a graphics chip designed by NVidia.

Microsoft's product will carry 256MB RAM, in contrast to the existing product's 64MB RAM. This extra memory can be used for higher resolution textures as well as visual enhancement techniques such as double-buffering and anti-aliasing at HDTV resolutions.

The move from Intel's x86 to PowerPC architecture means the Xbox Next won't run existing Xbox games natively. However Microsoft's acquisition of Connectix's Virtual PC last year means the company may add a level of emulation to the device to make existing titles forward-compatible.

A report by The Inquirer Web site claimed that Microsoft has distributed the software developers kit for the second Xbox iteration, and that this was seeded to developers on Power Mac G5s. Microsoft hasn't confirmed the news.

Business briefs

- Apple is refusing to pay a 10/15-euro French tax on music players intended to compensate artists for illegal music downloads.
- Apple CEO Steve Jobs hit 94 per cent on the March Forbes CEO approval list – the highest-ever rating.
- IBM has launched a $1 billion plan to take on Microsoft in the software technology sector for servers.
- DVD media prices will fall as production expands worldwide. An estimated 1.5-2 billion discs will be used this year.
- iPod chipmaker Wolfson Microelectronics announced £6.7 million profits (up from £1.9 million) in its first results since going public last year.
- Umax is partnering with Microtek Europe. It will take over Microtek distribution and support.
- Apple US has sacked a number of education unit staff as its teams face state budget cuts and competition in the market.
- Former Oracle exec Sebastian Gunningham – hired by Apple to lead its corporate sales – has quit after two years. The company is seeking a replacement to lead its foray into enterprise markets.
- HP and Philips are working on a copy-protection technology for digital-broadcast signals.
- VAR Business describes an "undercurrent of dissatisfaction" as US Mac resellers find they have been "left out in the cold" by Apple's US retail initiative.
- Media 100 has been acquired for $2.5 million by video encoder/decoder specialist Optibase.
- A revolt by 42 per cent of Disney's shareholders has forced current CEO Michael Eisner to vacate his chairman's position as he faces more pressure to resign.
- The EU has introduced a levy against US exporters in a move that could cost many US firms millions of dollars.
- Japan's Fair Trade Commission raided Microsoft's Japanese offices in February as part of an investigation into anti-competitive practices by the company.

Growth Apple's '04 aim

Apple's chief financial officer Fred Anderson – accompanied by corporate controller Peter Oppenheimer – spoke at two major financial conferences recently, in the wake of the company enjoying its first $2 billion quarter for four years.

Anderson is retiring from his position on June 1, and will be succeeded by Oppenheimer, currently Apple senior vice president of finance and corporate controller.

The pair addressed Morgan Stanley's Semiconductor and Systems conference in March and the Goldman Sachs Technology Investment Symposium in February, and both stressed that Apple would like to again become a $10 billion company.

Last year was dubbed by Apple as being the Year of the Notebook. Asked what the company's strategy was for 2004, Anderson said: "We have no specific theme this year except growth. The three key growth drivers are mobility and wireless communications, the digital lifestyle and music. Because we have this modern Unix-based technology in Mac OS X we are able to innovate much faster than Microsoft."

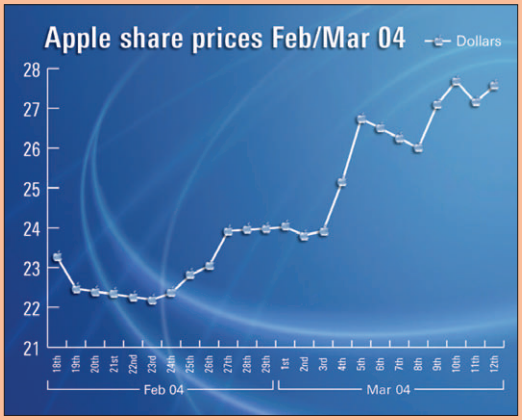
Apple chose to invest its way through the IT slump, and continues to benefit from the decision. Anderson said: "Apple increased research and development over three years to bring out even more innovative products. Our R&D spend climbed from $300 million per year to around $500 million per year." He pointed to the four versions of Mac OS X shipped so far to help justify the investment. "Because we have this great foundation we are able to innovate fast."

Of iPods and the Music Store, Anderson said: "iPod has been a grandstand home run. We could have sold more iPods in the Christmas quarter if there had been greater supply.

"We have gone for broad distribution to remain competitive. We want to focus on continuing to innovate. We don't want to rest on our laurels."

Apple has recently forged alliances with Pepsi, HP and AOL, and Anderson revealed there are more in store. "We are working on other alliances, but have nothing to announce now." The HP deal – made possible by the release of iTunes for Windows – does not preclude Apple from securing similar deals with others.

He added: "We ported iTunes because we are making a broad strategic market play for the iPod. We have no current plans to move other iLife apps to Windows, but where we think it makes business sense we are open to consider it."



Apple is "hard at work" on bringing iTunes Music Store to other geographies, Anderson observed, adding: "iPods are doing really well in Europe. I hear in the UK it has generated the same sort of cultural change as you see in New York. It feels good to be competing in the total market. The HP deal shows a willingness to partner where it makes sense, and Apple will continue to employ that philosophy.

"With the HP deal we are going to get tremendous momentum behind establishing the AAC format as the standard."

Anderson says iTunes Music Store is a 'Trojan horse' to generate iPod sales. "Traffic to the music store will lead to iPod sales, and over time because people will love our products, people will buy a Mac. We're not going to let anyone else take our leadership position".

Responding to questions about Apple's pro-market share, the executives said: "Many creative professionals are moving to portables, given the size of displays, their performance and the desire for mobility. And in the overall industry there is a real growth area in portables."

Of Power Mac G5 Apple's financial leaders said: "We think we can sustain around 200,000 unit sales of Power Macs per quarter during a given product's lifecycle."

Discussing Apple's retail initiative Anderson stressed that the company is aiming to open "somewhere around 80 stores by September". He said the stores are creating "significant growth" for the company. "We don't plan opening any stores that we don't believe will break-even within the first year." He said Apple is "very pleased" with the $9 million profit its retail segment saw in the Christmas quarter

Anderson added that Apple has developed a retail model that can "reliably predict sales in a potential location".

Anderson and Oppenheimer said: "We are focused on growing our company. As we do you will see cash flow from operations grow. We will continue to review strategic acquisitions."

Apple's share values reached a three-year high in early March. MW

Jonny Evans

Macs' share down

Apple's fourth-quarter 2003 global market share dipped under 2 per cent for the first time, according to analyst firm Merril Lynch.

Apple is ninth in the market with a 1.7 per cent share in the quarter, but the analyst observed: "We expect iPod success eventually to spill over into Mac purchases."

Merril Lynch has increased its unit-growth forecast for the PC market for 2004 to 13 per cent from a previous estimate of 11 per cent. It did so because the consumer market remains strong. It also anticipates continued improvement in business markets, as corporate entities are driven upgrade their tech infrastructure.

EasyShare updated

Kodak has announced the EasyShare DX7630. A 6-megapixel digital camera with a 3x optical zoom (equivalent to 39-117mm). It also features a low-light autofocus system that Kodak claims is able to "sharply define a subject, even in almost complete darkness".

Other features include continuous auto-focus, a 5.5cm, high-resolution (153,000-pixel) LCD screen, 24 frames per second full-motion video, and automatic picture rotation, so pictures taken vertically appear right-side-up on the camera.

Kodak claims a user can take a picture by simply pressing the shutter button, regardless of which capture mode or menu is active – a feature unique to EasyShare cameras. Another unique feature is the Share button, which allows on-camera selection of photos for printing or emailing.

The camera features 32MB of internal memory. Additional memory can be added via the SD card/MultiMediaCard expansion slot. Kodak supplies a rechargeable Li-Ion battery that it claims allows up to 80 minutes of video recording. It costs £349.

0870 243 0270

Instant access
The EasyShare DX7630 enables selection of photos for printing or emailing.

Belkin has it in the bag

Belkin has announced a new collection of multifunctional cases for 15-inch laptops. Three NeuElements bags are available: Executive, Business Casual, and Studio. Each case features StuffBak – a loss-protection service that helps owners retrieve missing possessions thanks to a unique ID label that tells the finder how to return it and receive a reward.

The Executive bag protects a notebook in a durable, honeycomb-construction setting. It features an ergonomic shoulder strap and handle. The Business Casual bag protects a laptop with a ballistic-nylon design, and offers space for CDs, disks and mobile phone. The Studio bag is lightweight, and protects laptops in a specialist closed cell with high-density foam. The range is priced from £18.

00800 2235 5460

New FinePix released

The FinePix A120 is FujiFilm's new 3.1-megapixel digital camera. It features both an optical viewfinder and high-quality 1.5-inch screen. The camera features movie-recording capabilities up to 10 frames per second. FujiFilm claims it can record for up to 60 seconds at 320-x-240 pixels, and up to four minutes at 160-x-120 pixels using the included 16MB xD-Picture Card. The camera is powered by two AA Alkaline batteries, and is expected to cost £299.

020 7586 1477

PowerMate for GarageBand

Griffin Technology has introduced GarageBand support to the PowerMate – its USB Multimedia Controller and Input Device that can be used for scrolling through long documents, volume control, or as a Jog/Shuttle wheel in movie editing.

This support means PowerMate-equipped GarageBand users can quickly navigate through songs and control playback using Griffin's device. The new software also includes custom settings for all the iLife apps, as well as Microsoft Office, Excel and other applications. The version 1.6 upgrade is available for free to existing users. The PowerMate costs £52.

AM Micro, 01392 426 473

AppleScripts for iTunes

Doug's AppleScripts has posted new and updated AppleScripts for iTunes – all are free. They include the following facilities: copy NetNewsWire subscriptions to iPod, copy clipboard text to iPod contacts, and download artwork from Amazon. Other functions include an applet that compels users to rate unrated tracks and the ability to see what songs in your shared library are being heard by others.

www.malcolmadams.com

Eye eye

Stick Software has upgraded Eyeballs. Version 3 of the customizable desktop eyes adds skin support, nine built-in skins, personality controls, and bug fixes. The eyes watch the cursor, get sleepy depending on how active it is, and blink periodically. It costs $10.

www.sticksoftware.com

Radio friendly

Live365 has launched Radio365 for Mac. Radio365 integrates Internet radio and digital downloads via the iTunes music store for US users. The free download allows users to listen to all Live365 stations.

www.live365.com

Broadcast iTunes songs

Rogue Amoeba has updated Nicecast – a tool that lets users access their iTunes music library via the Internet. Version 1.5 supports Live365.com, integrates with Megaseg DJ automation software, and broadcasts crossfades. It costs £24.

www.rogueamoeba.com

iPod-sync tool released

PocketMac iPod Edition has been released. The product lets Mac users sync Entourage data such as contacts, calendar events, notes, tasks, email and documents to their iPod. It converts and copies the text, rich-text, PDF, or Microsoft Word documents to the iPod's built-in note viewer. Syncing was only previously possible through iCal and the OS X Address Book. PocketMac iPod Edition requires iTunes 4 and costs £15.

www.pocketmac.net

continues page 38

Apple updates

Apple has updated **iDVD** to version 4.0.1. The patch provides improved reliability when authoring and burning DVDs.

Apple has also released a patch for the OEM versions of a variety of NVidia graphics cards it ships inside many Macs. **NVidia FCode flasher 1.1** (564k) requires Mac OS X 10.2.4 or later. **AirPort Extreme 3.3.1** (1MB) improves the reliability of AirPort connections when changing network locations, according to Apple.

The company has also posted an update to its iSight camera. **iSight 1.0.2** (512K) offers improved auto exposure, auto white-balance; enhanced IIDC compliance; and better performance.

The **AppleWorks 6** update for Mac OS X and Classic supports mice with scroll wheels, and improves the performance and reliability of its presentation and spreadsheet environments. The OS X version offers improved printing, and resolves issues using Web-based templates and clip-art on networks using proxy servers.

Apple has also issued four **Security Updates** that deliver security enhancements for Panther client (1.6MB), Jaguar client (5.6MB), Panther Server, and Jaguar Server. Apple recommends all Macintosh users install them.

Third-party updates

Xtream Path – CValley's path-editing tool for Adobe Illustrator users – has been updated to 1.1.1. The update fixes the problems associated with the Rotate Mirroring, Reflect Mirroring, and Wallpaper tools.

The Xtream Path User Guide has also been updated to include bookmarks.

Microspot has updated **MacDraft**. Verison 5.5 of the 2D-design, drafting and technical illustration program includes a number of bug fixes. It requires Mac OS X 10.2 or higher.

HP's projecting strength

Video star
The mp3130 projector automatically optimizes itself for video and data output.

The Officejet 5510 (right) is HP's new colour all-in-one – offering photo-quality printing at 4,800dpi, flatbed faxing (with a 33.6Kbps modem), scanning and copying. It will print or copy up to 17 pages per minute (ppm) in black-&-white or 12ppm in colour, and can produce 10-x-15cm borderless prints. It allows faxing directly from a Mac, and features 90 speed dials, and a 90-page memory. Other features include a built-in 20 sheet automatic document feeder for unsupervised faxing, scanning and copying. The duty cycle is 1,500 pages per month. It will cost £199.

HP has also unveiled a new digital projector in a unique vertical format. The mp3130 (left) is a digital projector that delivers images with 1,800 ANSI lumens and a 2,000:1 contrast ratio. It accepts input from VGA through to SVGA+ and scales its resolution to ensure crisp, sharp detail, according to HP. The mp3130 also features Automatic Image Optimization enabling it to automatically detect the difference between data and video streams to provide the best possible image for the type of input, preventing over-whitening and saturation, according to HP.

In addition, the mp3130 offers wireless connectivity with notebooks or PDAs, and an optional Smart Attachment Module allows users to store presentations on the projector.

It features integrated speakers, is ceiling mountable, weighs 1.7kg, and measures 9-x-7.8-x-9-inches. It will cost £1,749.

0870 010 4320

New books for designers

Laurence King Publishing has two new books for designers and typographers, published in April.

■ 20th-Century Type Revised Edition by Lewis Blackwell provides a decade-by-decade analysis of the history of typographic and graphic design. This highly illustrated edition brings the story up to date with analysis of the digital revolution. 20th Century Type Revised Edition is an informed and accessible guide to typography for designers, students and general readers.
ISBN: 1-85669-351-1; £25

■ New Book Design (right), edited by Roger Fawcett-Tang, brings together the most interesting and influential book designs of the past ten years, featuring more than 100 titles chosen for their outstanding design qualities.

The book (with 700 colour illustrations) examines each facet of book design: covers, contents and structure, grids, typography, paper, printing and binding. It includes books produced in unconventional formats and those that use unusual printing techniques.
ISBN: 1-85669-366-X; £25

Lexmark adds printers, all-in-ones

Lexmark has unveiled three new colour printers and three new all-in-ones offering scanning, printing and copying faculties. The £29 Z515 is Lexmark's entry-level colour printer. It features 4,800-x-1,200dpi printing at up to 12 pages per minute (ppm) in black-&-white, or seven in colour. The £44 Z615 offers 14 ppm printing in black-&-white and eight in colour. Resolution is up to 4,800-x-1,200dpi. Both machines have a 2,000-page-a-month duty cycle.

The £79 Z815 offers a resolution of 4,800-x-1,200dpi, can print up to 20ppm in black-&-white and 14ppm in colour, and offers borderless 10-x-15cm photo printing in 32 seconds. It has a duty cycle of 3,000 pages a month.

The all-in-ones all offer 4,800-x-1,200dpi printing, and a 48 bit, 600-x-1,200dpi scanner. The entry-level X1180 (£69) offers a 2,000-page duty cycle and copying via a host computer. The £99 X2250 and the more advanced £129 X5250 offer a 3,000-page duty cycle and standalone photocopying.

0870 444 0044

New faces from Agfa Monotype

Agfa Monotype has added 20 monotype fonts from the Laurentian, Fairbank and Mosquito Formal families to Fonts.com. Laurentian includes regular, semibold and bold weights, with italics for regular and semibold. Fairbank is a digital revival of the Alfred Fairbank design. A calligraphic rendition of the face, as well as a suite of ornate caps, ligatures and lowercase swashes, are available.

Agfa Monotype has also introduced the URW++ font collection. According to Agfa, the URW collection includes some of the world's most widely used typefaces including URW Futura, Polonaise, a formal script with long, flowing capitals, and Casablanca, a versatile titling font with a geometric structure. Individual fonts start at £12.

0800 371 1242

Casablanca Light Aa Bb Cc Dd
1234567890 !@£$%i&*()

Futura Light Aa Bb Cc Dd
1234567890 !@£$%^&*()

Polonaise Bold Aa Bb Cc Dd
1234567890 !@£$%^&()*

High-res flats

Sony has announced the SDM-S204 20.1-inch LCD display, a high-spec monitor designed to replace conventional 21-inch CRTs for applications demanding extended resolutions, according to the company.

SDM-S204 features UXGA (1600-x-1200-pixel) native resolution, with a response time of 25 milliseconds, and analogue and digital signal inputs. Sony suggests that the presence of analogue and digital inputs gives users the flexibility to use more than one machine with the monitor. It offers brightness levels better than 250cd/m2 meaning that it can cope with a wide range of ambient lighting conditions, the company says.

The £999 SDM-S204's screen provides 170 degrees of clear viewing. It offers automatic signal type detection and state-of-the-art automatic image adjustment, as well as manual controls. The display's power-saving deep-sleep mode reduces power consumption to 3 watts.

Sony has also launched the 17-inch SDM-HS73P. Sony claims that the monitor technology adds "depth and vibrancy" to all images and that its 16-millisecond response time ensures that moving images (in games or on DVDs) remain clear and sharp.

Sony's "ultra bright" screen technology is made possible by a carefully engineered combination of glare and reflection reduction, according to the company. Sony claims that because most LCD screens are coated with a light-diffusing layer intended to reduce reflection from the surface, light from the LCD is scattered and diffused as it passes through the coating. Sony says it uses a glare filter and reflection-reduction layer that has no diffusing effect on the light passing through it from the screen and claims this makes colours appear more vivid, and enhances the level of brightness.

The HS73P achieves a brightness rating of 400 cd/m2, a native resolution of 1,280-x-1,024 pixels, and 160-degree viewing. It costs £448.

08705 111 999

FrameForge 'virtual 3D film studio' revamped for X

FrameForge's £256 3D Studio Previsualization is the first 3D previsualization storyboard software with real-world multi-camera control, according to the company.

It can position virtual cameras anywhere in a drag-&-drop 3D virtual film set, and ships with fully articulated actors, hills, trees, outdoor locations, vehicles, snap-together walls, furniture, and other elements. FrameForge 3D's Control Room has monitors displaying the views of eight cameras. It is possible to control camera pan, tilt, dolly, zoom, and crane.

The storyboard can be presented in various formats including a slideshow, HTML, or a Flash animation. It includes an image of the shot as seen by the camera, a 2D blueprint view, and camera settings required for set-up.

The Screenwriter's Store, 020 7261 1908

Sync different

Econ Technologies has updated ChronoSync, its data-management tool that synchronizes files and folders from between disk locations for back-up or complete synchronization. Version 2.0.4 is flexible enough to handle "the simplest to the most complex synchronizations," according to Econ. The update optimizes the speed of ChronoSync when performing sequential syncs. Other new features include duplication of rules and scheduled items for easier setup of sync documents, and interface improvements. ChronoSync costs £16; the update is free to existing users.

www.econtechnologies.com

Workflow tool goes X

Markzware has introduced Mac OS X support in the latest release of FlightCheck Workflow – its automated workflow assistant with built-in pre- and postflighting, formerly known as MarkzScout 2. Version 3.1 also includes Microsoft Office support, a faster scripting engine, and more extensive PDF checking, according to the company. FlightCheck Workflow aids prepress operations, "simplifying and automating" workflow processes. It creates an automatic task-management process that looks inside a native application file to sort, filter, categorize and route each file based on its elements, to the appropriate prepress path, says Markzware. It costs £799.

0800 328 9919

iClip software updated

Inventive has updated its iClip productivity software that stores, organizes and accesses bits of information that aren't practical to save as entire documents. iClip is a multiple clipboard application that's designed to "improve user efficiency and productivity". It's possible to drag-&-drop or copy-&-paste text, pictures, URLs, sounds and movies into clipping bins. It costs £13.

www.inventive.us

continues page 41

Helping hand for ranking

Caphyon LLC has announced Advanced Web Ranking 2.5 – the latest update to its tool that checks a Web site's position on all major search engines.

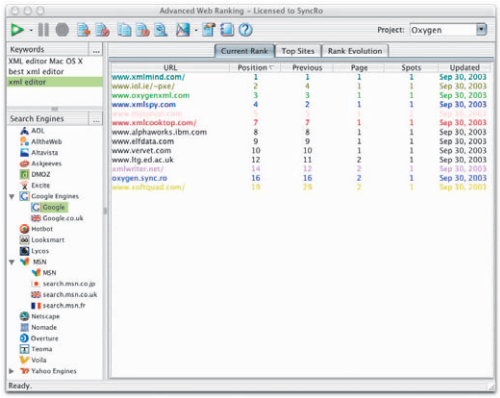
Advanced Web Ranking is able to query over 130 search engines and find out if a site is moving up or down in the rankings. It will also track the progress of rankings over time and display that information in graphical and tabular reports.

Various types of reports can be created in PDF, HTML, Excel, XML or Text formats. These can be emailed to any number of email addresses, or saved to a folder for access via the Internet.

The new version features two new interactive reports: a Current Rank report, and an Overview report. Both display all the keywords of a search engine in one view. It is also possible to define custom reports, and a URLs panel is included for selecting multiple URLs to be highlighted in the report views. Advanced Web Ranking also generates and emails reports after completing an update, which can be scheduled.

A standard edition costs £30. The professional edition costs £63.

www.advancedwebranking.com



Information at your fingertips
Graphical and tabular reports can be generated from over 130 search engines – showing exactly how a site ranks.

New G5 rack-mount

Marathon Computer has announced a rack-mounting solution for the Power Mac G5.

The Marathon Rackmount allows two Power Mac G5s to be mounted side-by-side, taking up 12U. Custom-fitted brackets conform to the shape of the G5's handles and lock both G5s in place on a shelf that is constructed out of heavy-duty aircraft-grade aluminium. Rigid cross-bracing prevents sagging, and steel rear supports adjust to fit rack depths from 19-inch to 34-inch.

There are also three ways in which a single G5 can be mounted. It costs £127.

Technical Earth, 020 8450 0303

Themed collections

Abstract Image Library gather no moss has added a new rights-managed themed-collections section to its Web site. The new collection of concepts includes Finance (right), Moods and Speed sections. All art available on the site costs between £30 and £220 depending on size and use.

www.gathernomoss.com

Diskology offers drive-copying tool

Disk Jockey is a hard-disk copy and diagnostic tool from Diskology. It also mirrors data between two hard-drives, spans two disks to look like one logical volume to the computer, tests drives at the block level and verifies data that has been copied between drives is intact.

According to Diskology, the device copies data between IDE hard-disk drives at "lightening fast" speeds while maintaining all of the attributes of the original hard disk, including hidden folders, multiple partitions and operating system files. It connects via FireWire or USB 2, and works with any size drive that supports Ultra DMA. It will cost £249.

0870 464 0600

Hope for 'dead' CDs

SubRosaSoft has unveiled CDRestore version 2.0. It now includes Audio CD support, CD burning capability, a new streamlined interface, and the ability to restore audio CDs. According to SubRosaSoft, the new version does not require third-party CD-burning software since it is now able to burn its own disks. CDRestore also works with audio CDs. It is possible to change song order and remove songs. The tool features a one-click interface enabling users to restore scratched or surface-damaged CDs. It costs $24.

www.subrosasoft.com

All about (disc) image

MindVision Software has released FileStorm 1.7 and FileStorm Pro 1.7 for Mac OS X. Built for Mac OS X, the updates offer a WYSIWYG interface for creating customized disk-image (.dmg) files for delivering software products via the Internet. The standard update adds a transparent scrollbar so that it is possible to see window-size differences between disk images (Mac OS X 10.2 or later required) and fixes a number of bugs. It costs £13. The pro update also adds the ability to localize a FileStorm Pro installer and adds a Select All button to the uninstaller. It costs £53.

www.mindvision.com

Keep it under wraps

Lava Software is shipping PC-Mac PasswordVault v2.1, a password manager that securely stores Web-site usernames and passwords, Internet banking data and software-registration details. The new version is updated for Panther and now stores longer usernames, passwords and Web addresses. These are accessible via a global floating window. PC-Mac PasswordVault protects user data with 896-bit Blowfish encryption. A master password provides access to information. The Lite Edition of PC-Mac PasswordVault supports up to ten services and is free. The £13 Standard Edition supports any number of services.

www.lavasoftware.com

continues page 42

CrossScannerX updated

CrossScannerX, the single switch emulator for Mac OS X includes two new modes: Inverse Scan and 2 Switch Step Scan. The tool enables full computer control via one of two switches or a pointing device. Also available is the £189 KeyStrokes 3 from Niemeijer Consilt, which works in conjunction with CrossScanner and replaces an OnScreen keyboard. CrossScannerX costs £53. Purchasers get a discount on KeyStrokes 3.
www.rjcooper.com

Customer service

Green Button's Perfect PA is a customer-relationship management tool. The product files outgoing and incoming letters, emails, faxes and other communications. It has a facility to view and store documents on a project-by-project basis, and is able to target mailings by post, email or fax. The product will cost £199 for a single licence, or £300 for network version.
Computer Warehouse, 020 8400 1298

Web-content with ease

Cross Culture has announced Mergemill 3.5. The software merges templates with content source files and lets users create Web pages from a database or spreadsheet, or reformat data for publishing. The upgrade expands IF tags and adds a new set of CASE tags. It costs £63.
www.crossculture.com.hk

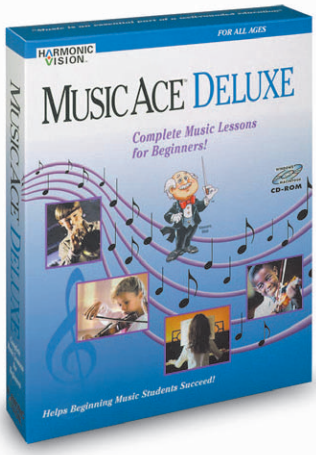
Song of a batch

Sample Manager is a batch audio processor from Audio File Engineering. The £30 tool supports Apple Loops, AIFF, WAVE and Sound Designer II files and any sample rate or bit depth. Files can be sorted by parameter, users can view waveforms, there's advanced loop editor, and MIDI playback is possible.
www.audiofile-engineering.com

Spam sings swan song

Vicomsoft's SpamBolt removes unauthorized attachments and blocks certain emails. It can delete, redirect or modify emails based on user-defined rules. A licence for 25 email accounts costs £255.
www.vicomsoft.com

Music is child's play

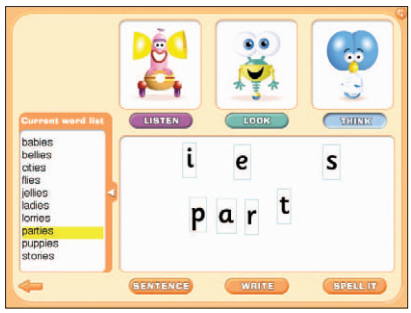


Harmonic Vision has combined thirty-six lessons from its Music Ace and Music Ace 2 titles in Music Ace Deluxe. The software is designed by music-education professionals and features self-paced lessons that teach basic skills including music theory, note reading, ear training, notation, keyboard, scales, rhythm, melody, key signatures, time signatures and harmony. It is aimed at children over the age of five.

Virtual instructor Maestro Max leads students through lessons with animated graphics and digitized sound effects. He uses the piano keyboard to help students visualize music concepts and gets them to play other cartoon instruments, including the violin, drum, saxophone, trumpet, clarinet and horn. At the end of each lesson, an arcade-like game reinforces the concepts learned. The program features a built-in record-keeping system that tracks the progress of up to ten individual family members.

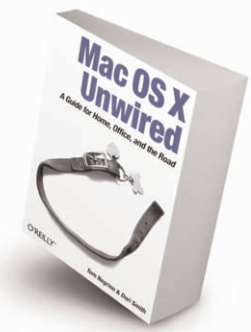
According to the company, the software can be used as an alternative to, or in support of, music lessons. UK pricing is to be confirmed.
Guildsoft, 01752 895 100

Spelling lessons



Spell It! is the latest educational CD from Sherston and BBC Worldwide Children's Learning. It is designed to help Key Stage 2 children learn to spell, with three activities and a learn section for individual use or whole-class teaching. Children can practice various spelling strategies and rules. The CD includes 2,500 words in 400 word lists that teachers can assign to individuals or groups to suit specific needs. It is possible to track progress with a record keeping function. Spell It! costs £49 for a single-user licence.
01668 843 200

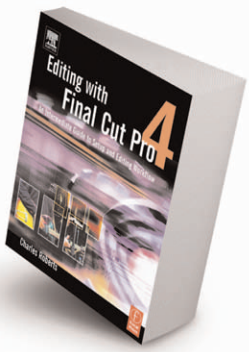
New Mac book releases



Mac OS X Unwired is O'Reilly's guide to the basics of wireless computing, offering advice on setting up a wireless network or accessing wireless data services on the road. The book includes details about AirPort, AirPort Extreme, Bluetooth, Infrared, CDMA and GPRS. It costs £17. **ISBN 0596005083**

Adobe Photoshop CS Top 100 Simplified Tips & Tricks from Wiley offers shortcuts, tricks, and tips for Photoshop CS users. The guide offers illustrated instructions for 100 tasks that reveal secrets, teach timesaving tricks, and explain productivity tips. It costs £13. **ISBN 076454182X**

Wiley's Design Graphics Photoshop Studio Skills offers classic Photoshop tricks and tips. The guide offers advice on Photoshop palettes and tools, Quick Mask, Curves, and the History Brush, improving digital photographs, and combining scans of the same image. The guide has been updated for Photoshop 7 and Photoshop CS, and costs £24. **ISBN 0764541765**



Teach Yourself Visually Macromedia Flash MX 2004 offers step-by-step screen shots that demonstrate how to tackle 100 Flash MX 2004 tasks including incorporating text and creating animations to working with layers and masks, adding Flash actions, and distributing Flash movies. It is published by Wiley, and costs £19. **ISBN 0764543345**

Dreamweaver MX 2004 Bible has been published by Wiley. The guide provides step-by-step instruction in Dreamweaver MX 2004 basics; including the updated interface and integration with Flash and Fireworks. Topics include, accessing code, using cascading style sheets, and using extensions. It costs £33. **ISBN 0764543504**

Editing with Final Cut Pro 4 is an intermediate guide to set up and editing, according to publisher Focal Press. The book covers the interface and workflow for editors, and includes coverage of working with other formats, such as uncompressed standard definition, high definition, and FireWire DV. It costs £26. **ISBN 0240805186**

David Fanning

You may think him crazy, but Macworld's intrepid technology trailblazer is taking computer risks for the good of humanity.

The next big thing

Many Mac fans are what marketing people call 'early adopters'. I'm one. I install anything Apple tells me I should. I also install beta code willy nilly, and even had a copy of the OS X public beta running for a while (until I needed to print). Even now I often end up the unwitting beta tester when I thought I was reviewing a finished product.

I thought everybody was like this until I worked in publishing – production people recoil, Gollum-like, from anything that might screw-up their system. But what if everyone was like that? New products need people who are willing to risk sanity trying untested applications and hardware. I wonder if Henry Ford had problems getting people to buy his cars because "horses work just fine"?

While it isn't like being a Chuck Yeager-style test pilot, trying new things can be exciting. There's nothing like the thrill of being first with The Next Big Thing. But of course you end up being first with things that never get to be Big Things at all. Take my Newton, for example... or my Rabbit phone... or the Web site that I haven't updated since 1995.

Apple is an early adopter; it takes untested technologies and incorporates them into its hardware way before the rest of the PC crowd catch up. The company popularized USB when PC manufacturers hadn't really got their heads around it. The PC manufacturers were reluctant to include USB on their computers because there were few USB peripherals available at the time. Stingy PC buyers didn't want to pay extra for something they couldn't use. Apple CEO Steve Jobs, on the other hand, decided to add it when the original iMac came out. Before you knew it, the market was flooded with USB devices. That's why so many of the early USB products came in Bondi Blue.

Another Apple coup was AirPort. Wireless networking was already working, and the 802.11b standard was all set out when the AirPort launched. But it was Steve and the gang that made it affordable to the masses. That was almost four years ago – PC laptops are just beginning to advertise the fact that they are WiFi-ready.

Add to the list of Apple early adoption the mouse, the 1.4MB floppy drive, the CD-ROM, Gigabit Ethernet, colour screens, LCD screens and the iPod. Apple is king of the early adopters, and we reap the benefits.

The term 'early adopter' comes from Diffusion of Innovations by Everett M Rogers. There are five categories of adopters: innovators, early adopters, early majority, late majority, and the laggards. Innovators are at the real cutting-edge. They will buy DVD players before DVDs are available to play on them. They're nuts. The early adopters are the well-informed 13.5 per cent who are among the first to try out new stuff. Once the early majority sees what cool stuff we have, they follow suit. Then the late majority notices that half the world has moved to the cool new thing, so they take it up too. Finally, the laggards move to the cool new stuff long after it stopped being cool or new.

One reason to be an early adopter is because if you're the first to a new technology, it may give you an advantage. Take desktop publishing: when the Mac was first plugged into a PostScript laser printer it put older typesetting systems in jeopardy – anybody could compete with companies that had invested thousands in typesetting systems. A similar thing is now happening with video.

The trick is to know which technology will give you a competitive edge, or at least make you look cool. The only way to know that is to take a risk and be an early adopter. Remember, innovators take the insane risk of buying unfinished products that work only with products that haven't yet been invented – so you've a safety net.

Looking around, there are a few technologies that demonstrate what I mean. The 3G phone market is still early in its development. Of course, you know there were those that *had* to have one as soon as came out. This is despite the devices costing the earth, looking like sandwich toasters, having limited coverage and having no users. The 3G phone market is still growing as the early adopters have taken over form the innovators. If 3G phones are going to be a success, which is by no means certain yet, the early majority should jump on the bandwagon soon.

I know some people will still be sitting back thinking I'm a loon for wanting to take risks with my technology purchasing. You may be safe in the knowledge that I'll find the bugs, the shortcomings and the high prices, while you wait for it all to be fixed and drop in price. But waiting too long can be just as risky, and if your business depends on technology it can be downright dangerous.

Anybody who watched the Mac industry take over the pre-press and printing industry will tell you that there were plenty of hold outs – people who had spent thousands on typesetters one year, and refused to spend a little more on Macs the next year. The people that weren't in the first wave of innovation weren't around to figure out what they missed – they either updated or disappeared.

So even if your tendencies are to hold back and wait for things to be thoroughly tested, at least have an early adopter around to let you know what's new. I'll do what I can when it comes to Mac things – and give you the heads-up. But if a new razor blade, form of transport, or way of tying your shoes suddenly puts you out of business, don't blame me. MW

'There are five categories of adopters: innovators, early adopters, early majority, late majority, and laggards. Innovators are at the real cutting-edge. They will buy DVD players before DVDs are available to play on them. They're nuts.'

Michael Prochak

The 'information age' has conditioned consumers to the point where they cultivate relationships with their computers.

Careless whispers

Whether we like it or not, many existentially thinkable thoughts are socially unthinkable since everybody in a given society has roughly the same semantic imprint that is regularly reinforced by assumptions that are taken for granted.

Since this semantic circuit allows us to subdivide things and re-connect them more or less on a whim, we apparently end up with what noted Polish symanticist Alfred Korzybski described as the time-binding function. This, in theory, is what allows each generation to add new categories to our mental library, connecting, separating and reclassifying things in a seemingly infinite manner. But even if we keep in mind the fact that most of the world was illiterate until the 1970s, none of this goes far enough to explain why millions of Britons think that their relationship with their computer is becoming more important than time spent with the family, partners or friends.

Somewhere out in what currently passes for our reality tunnel, a Mori poll has mapped this conclusion along with the additional commentary that two in five of us actually feel lost without our computer while one in seven of us "often talk to it". OK... I admit that there have been occasions when I've shouted obscenities at my Mac. Particularly, when trying to figure out things like where my OS 9 scrapbook disappeared to, or why that nice feature showing what fonts actually look like in AppleWorks doesn't work in Mac OS X 10.3. But I don't think I've ever talked to my Mac in anyway that could be described as social or interactive. Sure, I know people that you can never reach by phone in the evening because they're glued to the Internet. And I know others that spend hours upon hours exchanging dubious or disturbing drivel in chat-rooms. But if this is what now passes for 'relationships' or even conversation, then things have got a lot worse than even I imagined.

In our Western world of reality TV, talent-free music and an increasing desire for fame without function, half-shamed cynicism appears to be the only remaining ethical stance. Granted, in much of the past what we know as traditional society didn't need, couldn't use and for the most part discouraged the development of high verbal-skills for most. But even today, in what we like to refer to as the Information Age, most people still aren't encouraged to be very smart – and in general, are actually rather heavily programmed to be comparatively stupid.

I can see how such programming is needed to allow the masses to fit into most jobs. And these days, it would seem that verbal skills are surplus to requirement when it comes to, say, composing text messages. Sure, this contributes to our inability to override our primitive bio-survival fears and territorial or patriotic pugnacity and allows political charlatans to erode our imprint of practical democracy with fraudulent threats of terrorism, marauding migrants and WMDs. But is all this enough to make us feel lost without our computers or to compel us to talk to them often?

It's easy to see why traditional systems work for traditional societies. If the majority of any population had, say, an intense curiosity about what the latest quantum theories mean in relation to determinism and free-will or really cared whether or not Immanuel Kant really refuted David Hume satisfactorily, you wouldn't have a society that would easily be led into dull, dehumanizing pasttimes or mind-numbing, dead-end jobs. You also wouldn't have a population that would elect the likes of George Bush, think that their relationship with their computer is more important than time spent with family, partners or friends, or feel lost without them if they need someone to talk to.

I like the fact that despite the grammar, Apple likes to think it thinks different. I like the fact that Apple's British-born vice president of Industrial Design, Jonathan Ive, has topped a BBC-commissioned poll to find Britain's top 50 "Cultural Movers and Shakers", beating off competition from author JK Rowling, fashion designer John Galliano and architect Norman Foster. I would also like to think that Mac users, by their non-traditional status, wouldn't be among those referred to in the Mori poll. Nor would they ever lose their curiosity and humorous unpredictability, or cease to be 'time-binders' capable of handling and creating artifacts like words, paintings, music, concepts, theories, and so on, which can be passed on through reality-tunnels to like-minded others – even across generations.

British-born anthropologist Gregory Bateson defined information as 'differences that make a difference'. This implies that the higher the level of unpredictability, the higher the level of information. Most of what we are fed by our so-called Information Age is so predictable that it doesn't even qualify as information. And most has nothing to do with us using our brains. If millions of Britons 'think' that their relationship with their computer is becoming more important than time spent with family or friends, and they really do feel lost without their computer, then they obviously haven't been assimilating differences that make a difference. And the fact that most of the people in the Mori poll must, by virtue of the numbers game, be using PCs with Windows, makes the whole survey all the more disturbing.

All ideas are not equally good. And regardless of whether or not they are existentially thinkable or socially unthinkable, you don't need to talk to your computer to find that out. MW

'Even today, in what we like to refer to as the Information Age, most people still aren't encouraged to be very smart – and in general, are actually rather heavily programmed to be stupid.'

Digital TV on your Mac

Manufacturer: ElGato
www.elgato.com
Distributor: CU, 020 8358 5857

EyeTV 400

Pros: Remotely programmable; pause live TV; digital; excellent quality; easy to use.
Cons: A little pricey, eats HD space at 2GB per hour.
Min specs: G4 500MHz; Mac OS X 10.2.8; 256MB RAM; 2GB hard-disk space for each hour of video to be recorded; Internet connection to use EyeTV's Program Guide.
Price: £249 including VAT.
Star Rating: ★★★★/8.7

EyeHome

Pros: Simple to use; quick to install; keeps all your media in one place.
Cons: Would be nice if it allowed DVD playback and encoded AAC files.
Min specs: G4 500MHz; Mac OS X 10.3; Internet connection recommended.
Price: £199 including VAT.
Star Rating: ★★★★/8.8

Tv tuners for the Mac have been available for ages, but have universally been a poor relation to a real TV. ElGato is the first to ship a product that not only puts a high-quality TV image on your Mac, it may even mean you chuck out the idiot box altogether.

The EyeTV 400 is different from an average, old-fashioned TV tuner because it's digital. The FireWire connection means you get full resolution – and better still, the DBV-T capabilities means you can get all the Freeview channels. The quality of image is perfect; as good as you can get. You can view it in a window or expand it to fill the screen. When expanded on my 20-inch flat-panel display there are some artefacts and pixelation, but only from up real close. Of course if you're watching TV, you won't be sitting two feet from your Mac; from a few feet away, the image looks perfect.

That's the basics, but there's plenty more to the EyeTV. The box, which is small and discreet, comes with an infra-red remote so you don't have to get up to change the channel. It's simple to connect, too – just plug in the FireWire cable and an antenna. You are advised to use a proper antenna, though if you're lucky enough to be in an area with a very strong signal, you can use a supplied antenna on the EyeTV. Freeview digital terrestrial is now available to most of the country. If you aren't sure about your area you can check www.freeview.co.uk to see if you're covered.

EyeHome setup
Like the EyeTV, setup is a cinch: just load the software on your Mac and start sharing. The box sits by your TV, connected by a Scart cable, and connects to your Mac or a network via Ethernet. If you have AirPort Extreme, you can use a bridge to wirelessly connect to your network, keeping the wires at bay.

Setup and configuration

The hardware is decent, but the software is what makes EyeTV a compelling buy. Setup is just a matter of launching the software – it will look for all available DVB-T channels. You should be able to get over 20.

Watching TV is one thing, but because EyeTV can keep a cache of the signal on your hard disk, you can also pause live TV. You can set the size of the cache, so potentially, with a 250GB FireWire drive you could pause TV almost indefinitely (well slightly over five days, by my reckoning). Recording is equally simple: just hit the record button and EyeTV will record to your hard drive.

If EyeTV is going to replace your video recorder, it needs more than just a record button. That's where www.tvtv.co.uk comes in. The TV listings Web site has extra features when you have a subscription, and ElGato has thoughtfully supplied a year's subscription in the box.

Once activated, the TVTV site gains little recording icons on all the listed programs. Simply pushing the record button will set your EyeTV to record. You'll need an Internet connection so that your EyeTV software can check for updated listings from time to time.

I should point out that this miracle of techie goodness has required me to know pretty much nothing about how it works. All I did was plug it in, and it set itself up. I had to fill in a form on the TVTV Web site, but that's it. Now that I've bookmarked the page, and my wife has too, we can set the video recorder in seconds.

The first time I recorded something from my desk at work, I realised that this is the future of television. This is how recording TV shows should work – until we can just download the shows as and when we want to watch them, this is the best way I have found to record TV.

Once the programmes are recorded, you can go back and edit out the adverts before you watch the show. There's a basic video-editing facility built into the EyeTV software. It provides a quick way to top-and-tail your show, and chop out any ad breaks.

If you're fond of a particular show, you can archive it to DVD with a SuperDrive. ElGato was founded by the guy responsible for developing Toast, the CD and DVD recording software. It should come as no surprise that EyeTV is designed to work perfectly with Toast 6 to let you record DVD video, or VCDs.

There are three versions of the EyeTV, though only the 400 offers really compelling reasons for buying. The EyeTV 200 offers only analogue TV, so at best you'll get five channels. It does have the added benefit of encoding analogue video signals, so it might be handy for putting your wedding video onto DVD at last. But otherwise it lacks the digital quality of DVB-T television.

The EyeTV 300 is an even more curious product. It's a digital satellite tuner but it currently lacks a card reader, needed to decrypt Sky TV or many other satellite subscription services. You should be able to get FreeView, but currently not much else. ElGato is actively trying to overcome the obstacles that stand in the way of this product, so watch this space.

Macworld.co.uk Subscribers can search Macworld's Reviews database online (www.macworld.co.uk), updated throughout the month

Once you have all the lovely recordings on the Mac, it isn't unreasonable to want to watch them on the TV. This is possible with another piece of ElGato magic, namely the EyeHome. The EyeHome is a digital media player – it plugs into the TV and accesses the stuff on your Mac. By stuff I don't just mean the recorded TV shows, but also your iPhoto library, iTunes library and any movies in your Movies folder (though curiously not QuickTime movies).

Turn on, tune in

Once you turn on your EyeHome (using the supplied remote control), it should find your Mac running the software. It then presents a choice of EyeTV content, Movies, Music or Pictures. The quality of the recorded shows is incredibly clear and sharp. Unlike VHS, the digital recording is as good as watching it live. The tuner in the EyeTV seems better than my old OnDigital box, which is prone to stutters and squawks.

One thing it doesn't do is take a live feed from EyeTV, which would be nice. That way you wouldn't need a digital box on your TV. You would also be able to use the time-shifting features on the TV instead of just on your Mac.

The iTunes music works just how you would expect it to, right down to the Smart Playlists. It lets you play your music through your TV, or if you have a home theatre system you can play it through that. This makes it a good alternative to the SliMP3 Squeezebox, which is a similar price but only does audio. There is one drawback, though not a major one, in that it doesn't play encoded AAC files.

If you have files that you encoded yourself, that's no problem – but if you have encoded files from Audible.com or (one day) the iTunes Music Store, they won't play. The digital rights management is the problem, but it's another thing ElGato is working to fix. Currently there are no devices that can get around it. However, it is a legal requirement rather than a technical problem. I hope Apple provides a solution to manufacturers of media players soon. Otherwise, as media players like this one gain in popularity, Apple will miss out on iTunes sales. The Movies option links to any MPEG or DivX files you have in your movies folder.

The Pictures option links to iPhoto images, and like the music it can see your saved albums. Viewing them on TV isn't quite as sharp as viewing them on a high-resolution computer screen. The resolution is low on TV, and the transitions are crude in comparison to the Ken Burns style you get in iPhoto, but the accessibility is definitely a plus. It's more comfortable flipping through photo albums sitting on a couch watching TV, than getting people to crowd around your Mac. You even get your music playing over the slide shows if you have any selected in iPhoto.

The final option is to view the services. These include basic Web-browsing and Internet radio playback. TV isn't a great way to view the Web, and the ElGato team only includes it as a convenience. It's handy for checking the weather, but not much else.

Macworld's buying advice

Both these products can be used individually, but really come into their own when used together. They are simple to use, and set up, and since they're young products, they will doubtlessly gain new features as the developers dream them up.

The price might sound like a lot, and… well, it is. However, if you compare it competing products it isn't a bad deal. The SliMP3 Squeezebox costs £250 – £50 more that EyeHome, but without the video playback.

The Pace Twin Digital Recorder is only £199, but lacks Internet programming and has only a 20GB disk in it. With this in mind, the elegance of the ElGato solution looks pretty good. You can kiss goodbye to your old video tapes.

David Fanning

Recording made easy

The great thing is that you can now program video recordings from anywhere in the world. All you need is Web access.

If you've ever tried to print labels in an inkjet or laser printer, you'll know how frustrating it can be. I find getting the labels into the printer the right way around and having the address centred is often more luck than judgment. Brother has a printer that takes the guesswork out of label printing – the P-Touch 9500PC.

Printing with the 9500 avoids the wastage that you get printing on label sheets, instead printing on tape from a cartridge. The labels come in a variety of widths, from 6mm to 36mm and are cut automatically by the printer. So whether you're printing a single label or a hundred, you only ever use as much tape as you need.

There's no problem using the printer with Word or any other application, but the 9500 comes with its own label software. The P-Touch editor is a simple-to-use package, full of features. Some, like the dreadful clip art, aren't particularly useful. However, it can generate bar codes, and use mail-merge data for address labels, which is very handy.

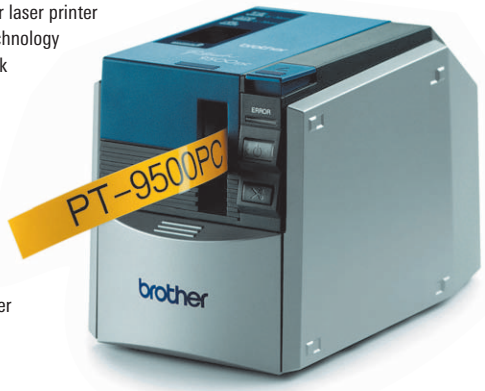
The tape-cartridge system is clean and, being a thermal-transfer technology, doesn't require ink or toner. This means that label costs are predictable, unlike printing with inkjet printers where low-cost units are thirsty for high-cost inks.

The printer is by no measure cheap. The £399 price tag seems difficult to justify when you can buy a colour laser printer for the same price. The technology is simple enough, so I think it's safe to say there's a considerable mark-up on the price. The competition is cheaper, but doesn't have the same broad range of label types. The P-Touch is obviously aimed at those with serious requirements, rather than the casual labeller.

Macworld's buying advice

The P-Touch is ideal for any labelling, whether for cables, address labels or security tags. Any business that needs labels, and I can't think of any that don't, would be well served by the P-Touch. It's a top-end product with a price to match, but could save time and possibly money if you print a lot of labels.

David Fanning



Dedicated label printer

P-Touch 9500PC

Manufacturer: Brother
www.ptouch.co.uk 0845 606 0626
Pros: Fast; clean; simple to use; vast choice of media.
Cons: Costs as much as a colour laser printer.
Min specs: Mac OS 9, OS X.
Price: £399 excluding VAT.
Star Rating: ★★★★/8.5

Media star

The tape comes in 20 colours, six sizes and three grades: if you've a particular requirement whether fluorescent, metallic or plain, Brother has it covered.

Inkjet proofer

Stylus Pro 4000

Manufacturer: Epson
www.epson.co.uk, 08702 416 900
Pros: Supports roll and sheet media; eight-colour printing; reasonable output speed.
Cons: PostScript RIP costs extra; roll-feed wastes paper; some colour-management challenges.
Min specs: PowerPC G3; Mac OS 8.6.1 or Mac OS X 10.1.3.
Price: £1,495 excluding VAT.
Star Rating: ★★★★/7.4

Drop-in rolls

Roll media is simple to load, dropping into place under a dust cover and feeding through easily without forcing you to fiddle around the back of the unit.

Epson's latest inkjet proofer is a worthy successor to the manufacturer's previous desktop wide-format efforts. Rising more than a foot high and stretching 3 ½ feet wide to accommodate its A2 print carriage, it certainly doesn't look like your everyday inkjet. Cut-sheet media is loaded in a large expanding cassette at the front, taking paper sizes up to 17-x-24 inches. A roll-feed unit is mounted high at the rear to make it easy to reach when standing in front of the printer.

Loading a roll is easy: once threaded onto the freely removable rod and the endcaps are pushed on, the roll just drops into the unit, whereupon you just push the end of the paper through into the carriage. Note too that the roll-feeder and sheet cutter are already part of the printer as standard: you don't have to build them as with certain HP proofers. Our only concern is that you seem to lose roughly 15cm of unused paper between each printout on the roll media, even with back-to-back print jobs.

Removable ink cartridges are held in fixed slots on either side of the printer, separate from the permanent printheads inside. Eight inks are required in total, each fitted as an individual cartridge. In addition to the conventional cyan, magenta and yellow are matte black, photo black, pale black, light cyan and light magenta. The Stylus Pro 4000 uses Epson's pigment-based UltraChrome inks, which promise better staying power on the paper, being non-smearing and (it is claimed) colour-fast for up to 75 years.

Despite the extra inks involved, high-resolution (1,440dpi) print speeds are pretty good for a proofer of this class. An A4 double-page spread output to 13-x-19-inch cut sheets took only around 12 minutes compared with the 20 minutes or so we would have expected from earlier Epson desktop proofers.

Results are worthy of the 'proofer' moniker thanks to the combination of multiple inks (not least the three-tone blacks) and the 3.5-picolitre droplets achieved by the Stylus Pro 4000 printhead. However, if our experience is anything to go by, obtaining colour-correct output is something you have to work at. By default, the printer seems to want to output all high-resolution work with a yellow caste that is so strong that it sends conventional colour-calibration products round the bend trying to correct it. With a great deal of trial and error, you'll get there in the end, but this is certainly no out-of-the-box solution for colour-critical environments. Also bear in mind that the unit we tested is the plain vanilla version; if you want Epson's PostScript RIP as well, add another £300 to the price.

Macworld's buying advice

With a PostScript RIP in place and a long time spent on colour calibration, the Epson Stylus Pro 4000 successfully straddles the market for photo and fine art reproduction with prepress proofing. Just don't expect instant miracles because the colour setup isn't as simple or intuitive as the hardware is to use.

Alistair Dabbs

Replacement mice

The Mouse

Manufacturer: MacMice
www.macmice.com
Distributor: AM Micro, 01392 426 473
Pros: Superb scroll wheel.
Cons: None.
Price: £34
Star Rating: ★★★★★/9.0

Wireless Optical Mini

Manufacturer: IO Gear
www.iogear.com
Distributor: Disruptive Technology Channels 01494 522 721
Pros: Recharges via USB.
Cons: Many other wires.
Price: £47
Star Rating: ★★★★/8.2

Memory Optical Mini

Manufacturer: IO Gear
Pros: 32MB memory module.
Cons: Cable gets messy.
Price: £47
Star Rating: ★★★★/8.4

USB Mini

Manufacturer: IO Gear
Pros: Inexpensive.
Cons: Fewer frills.
Price: £23
Star Rating: ★★★★/8.4

Prices include VAT.

It's 20 years since the Mac turned the mouse from something that squeaked and nibbled cheese into an everyday computer peripheral. The Mac's first mouse was a pretty boxy affair, but it wasn't radically changed until 1999 when Agilent Technologies had the bright idea to replace the hairy underside ball with a small, red light-emitting diode.

Apple's first optical mouse – introduced in July 2000 – is still the Mac's little mover, available for £39. A £59 wireless model came out last year, but apart from the Bluetooth connection, it remained largely the same in form and function.

They may be nice-looking, but Apple's mice suffer from the company's early decision to stick to just one clickable button. Luckily third-party mouse makers offer many Mac-compatible mice loaded with more buttons including the once-tried-never-given-up scroll wheel.

I've owned mice with more buttons than I have fingers, but I've never trained myself to use more than two and the scroll wheel. If Apple would only add a second button and a scroll wheel to its lovely optical mouse, I'd have no need to look elsewhere.

That's where MacMice's grandly titled **The Mouse** (right) comes in. It looks and works just like Apple's white mouse (and is also available in aluminium), and it has three-button/scroll-wheel functionality. The scroll wheel is one of the smoothest available – as good as those on Microsoft's recent mice. If you like the look of Apple's mice but simply must have a scroller or more than one button, The Mouse is a great alternative. As it has just three parts that touch the desk, it also gets a lot less mucky than the Apple mouse.

PowerBooks and iBooks don't ship with a mouse – but if you use a laptop for long periods of the day, a mouse will save your finger and trackpad from wearing out.

If you frequently travel with your laptop, a smaller-size mouse is in order. Three new **Mini** mice from IO Gear cater for most needs.

There's a wireless model that operates over standard radio waves rather than requiring a Bluetooth connection. The trouble with wireless mice is that the batteries run out quite quickly. So all credit to the IO Gear version that recharges its batteries via a simple USB cable. Setup is simple. Charge it, press the connect buttons, and plug in the dongle. Keep your desk tidy, however, as you could lose this under a stray piece of paper.

IO also has a mouse (below) that features a retractable cable so that, while not wireless, it is less prone to cable clutter. It also has a 32MB memory module that's perfect for carrying round files such as PowerPoint or Keynote presentations or just pictures of loved ones.

If you want a no-frills alternative, the wired USB mouse is plain and simple – although it does offer the chance to switch resolutions if the 800dpi is too whizzy for you.

Macworld's buying advice

All three IO Gear mini mice are small yet acceptable for long-term use – although I'd recommend a larger mouse back at the office or at home. One of these is certain to fulfil your mobile input needs. And The Mouse is the mouse that Apple should be shipping with all its desktop Macs.

Simon Jary

Macworld.co.uk Subscribers can search Macworld's Reviews database online (www.macworld.co.uk), updated throughout the month

Business publishing

RagTime 5.6

Publisher: RagTime
www.ragtime-online.com
Distributor: LanMarque, 01932 222 821
Pros: Mixes spreadsheets, text, drawings and images into single documents; mid-level layout capabilities.
Cons: Confusing interface; lacks bulleted lists and the ability to link text boxes on the same page; poorly implemented page-layout features; expensive for a mid-level program.
Min specs: Mac OS 8.1 or OS X 10.2; 32MB RAM; 120MB hard-drive space.
Price: £449 excluding VAT.
Star Rating: ★★★/6.0

The idea behind RagTime 5.6.5 is appealing: business publishing software that provides mid-level page-layout capabilities, à la Adobe PageMaker, as well as word-processing, charting, and spreadsheet tools. But the reality of RagTime 5.6.5 falls far short of its promise. While the program has several great features, it also has some incomplete ones, as well as some curious gaps and an awkward interface.

Jack-of-all-trades

RagTime's most powerful feature is its object-oriented approach. Documents can contain all sorts of objects: text, spreadsheets, images, and drawings. Unlike in Microsoft Office or AppleWorks, all of a document's components are dynamic and can be changed and edited as needed. For example, a sales proposal could contain a live spreadsheet with editable formulae and data. Compare that with Microsoft Word, which can import a Microsoft Excel spreadsheet, essentially as an image, but doesn't let you edit spreadsheet data directly (you must use Excel to edit, and then refresh the Word file).

RagTime's word-processing and spreadsheet features are comparable to AppleWorks' but not as capable as Office's. For example, there's no way to automate bulleted lists, nor are there spreadsheet formulae for transactions such as mortgage payments and other financial calculations.

RagTime can import Word and Excel documents, and it can export to Word, RTF, Excel, PDF, EPS, PICT, SYLK (an old spreadsheet format), and dBase formats. But during import, it ignores Word's page breaks and converts embedded pictures to in-line graphics, which flow with text and can't be kept in a static location, even if they were set to do so in Word.

You must delete embedded images and re-import them in RagTime to place them precisely. Like Office, RagTime is cross-platform (as is its file format).

The program also provides access to CMYK separations, so you can create documents that print on an imagesetter or another high-resolution output device. Finally, you can place images as independent objects, modify them, and wrap text around them far more easily than you can in Word. But due to RagTime's cumbersome, unintuitive interface, the process isn't as easy as it is in QuarkXPress or Adobe InDesign.

Serious flaws

Despite its conceptual strengths, more is wrong than is right in RagTime. First, there's the confusing interface. A whole slew of functions is dumped into the Extras menu rather than being organized in a meaningful way – for example, page-oriented functions in a Page menu and spelling functions in an Edit or Text menu. The name Extras is also misleading, since its tools are essential to the program – not add-ons. Similarly, an Auxiliaries label masks dialog boxes for important features such as style sheets; this may cause users to overlook important capabilities. And instead of Zoom, you have to find the Display Scale command.

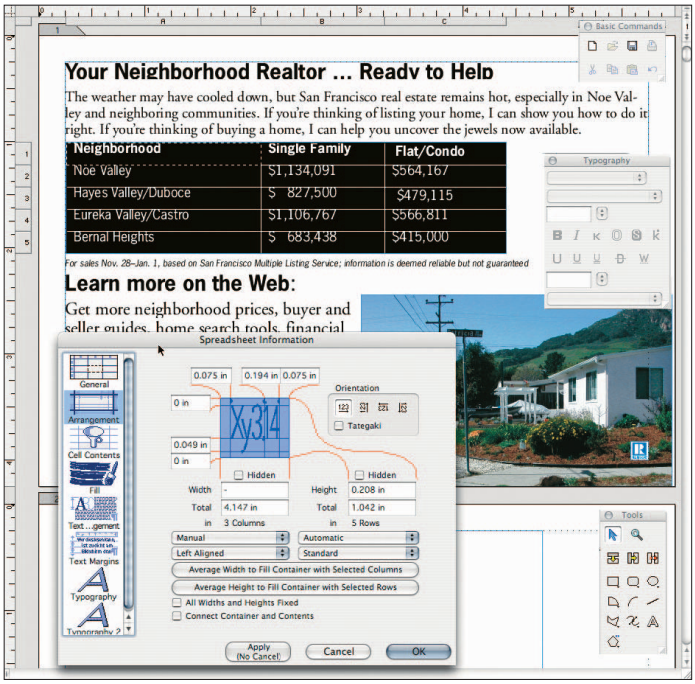
RagTime uses palettes for basic functions but leaves much of the layout-oriented formatting and preferences to menus and multiple dialog boxes. The result is that finding features is difficult and requires using different interface approaches. The one bit of good news is that many of the dialog boxes provide visual guides that show how the features look, so you can see what they actually do. They're much like the guides that XPress and InDesign provide, but with larger images.

The program also lacks some basic capabilities. For example, you can't create multiple text boxes on a page and link text between them – text can link across pages, but not within a page.

In addition, some features are poorly implemented. For instance, columns are an attribute of paragraphs, so if a paragraph's length changes, your layout also changes. Columns should be independent containers, not paragraph attributes. Similarly, hyphenation is treated as a character attribute, affecting text selections, not entire paragraphs as it should. And the tools for making layouts double-sided are practically impossible to find – I had to search the PDF documentation that comes with the program. This basic capability should not be hidden.

The on-screen refresh was inconsistent, with graphics often not redrawing until I moved off the page and then went back to it. I wished there had been a keyboard shortcut for importing text and images.

Finally, there's no printed documentation. RagTime comes with a PDF manual, but it's slow to search and navigate; a paper copy with a good index would be much more useful.


Your Neighborhood Realtor ... Ready to Help
The weather may have cooled down, but San Francisco real estate remains hot, especially in Noe Valley and neighboring communities. If you're thinking of listing your home, I can show you how to do it right. If you're thinking of buying a home, I can help you uncover the jewels now available.
Neighborhood | Single Family | Flat/Condo
Noe Valley | $1,134,091 | $564,167
Hayes Valley/Duboce | $ 827,500 | $479,115
Eureka Valley/Castro | $1,106,767 | $566,811
Bernal Heights | $ 683,438 | $415,000
For sales Nov. 28–Jan. 1, based on San Francisco Multiple Listing Service; information is deemed reliable but not guaranteed
Learn more on the Web:
Get more neighborhood prices, buyer and
Spreadsheet Information
Typography
Tools

Desktop publishing

RagTime integrates desktop publishing capabilities into its text- and picture-handling functions, going beyond typical word-processors. You can place pictures precisely, set automated text-wrap and hyphenation, and draw with bézier and freehand tools. The typographic features are also reasonably sophisticated: they let you use word-spacing, drop-caps, and custom-size small caps.

Macworld's buying advice

Even if RagTime 5.6.5 were a brand-new program – which it isn't – it shouldn't be such an unintegrated, unevenly implemented, and overpriced hodgepodge. The concept is solid; business users need an integrated word processing and page-layout program that makes it easy to create documents for presentations, price sheets, reports, and so on.

But until the interface is revamped, operations are streamlined and the many deficits are fixed, business users should stick with Office or AppleWorks, despite those programs' primitive layout tools, and should rely on InDesign or XPress for documents that need high-end layouts. I'd love to sing RagTime 5.6.5's praises, since there's a real need for this kind of program. Instead, I have to sing the blues.

Galen Gruman

If you're a news junkie who's gathered a growing list of frequently updated Web sites you just can't stop yourself visiting several times a day and could easily get out of control, try downloading one of these handy news readers for the purest possible hit. They'll take the stress out of keeping up with your habit.

Some RSS (Rich Site Summary)-based content readers are standalone and some work within or alongside your email client. There are plenty of Mac OS X-compatible readers to be found to download from various sites. They come in various forms and prices. You can get freeware, Lite versions and fully featured applications.

The reader applications work by checking pre-defined sets of Web site RSS feeds usually offering just the headline and a summary of the site's story. The list that appears then lets you click on and visit the referring site directly to read the full article via your Web browser. When a site's content is updated, the newsreader refreshes to show you a new article has been published and marks it as new or unread until you click on it. Obviously news readers work at their best if you have a broadband connection to the Internet – as using 56K modems means the speed at which they can retrieve news headlines is slow and frustrating.

Come one, come all

There are thousands of freely syndicated news Web sites and online blogs. Syndicated content like this seems to be the next step in the Internet revolution for sharing communications from person to person via their desktop computers. RSS uses XML code to make the process of sharing content between Web sites much easier.

The main advantage in using a standalone news reader to check favourite sites is that you can check several in one go and don't have to go and visit them all individually every single time you want a news update. Plus if you leave the newsreader running in the background on your Mac, you can set it to download at certain timed intervals – meaning you'll always know when a new headline has been published without having to check the Web site just in case.

We reviewed the full version 1.0 of **NetNewsWire** in April 2003 and look at the free Lite version here. It's a fast, easy-to-use reader with many useful features. If you don't want to fork out for the full version, the Lite version is perfectly acceptable for daily news checking. It also offers a bandwidth checker, a customizable interface and ability to add more feeds via some useful links integrated into the menus.

NewsMac is a fully customizable newsreader just recently updated for Panther. You can select which items you would like to have in the toolbar at the top of the main window. You can add and remove channels and listings, and rearrange the order so your favourite important bookmarked news is positioned exactly where you want it.

The new Collections drawer lets you store favourite feeds in one place, and has a mode for syncing with Palm-like devices. A built-in Feed Finder works by linking to major directories that catalogue various sites that host their own feeds. These can be added to your drawer full of information sources. A Collections section helps to keep multiple feeds in tidy sub-groups. Keywords can be highlighted to draw attention to the headline featuring those words.

NewsMac also features a Sync Devices button much like Apple's iSync: it allows Palm PDA devices to sync with customized channels. NewsMac's layout is reminiscent of a typical basic Web browser. Easy-to-use buttons are available to arrange bookmarked feeds – plus it comes with utilities that let you sync with an iPod or iPod mini via a dock connector.

Tickers and lists

NewsFan is different from the rest of the readers reviewed here in that it features a desktop-ticker news-alert. It seems to work pretty well, but it could easily become as distracting as spam pretending to be legitimate emails. This too relies on a permanent Internet connection. NewsFan also has an automatic translation tool. You can add keywords to narrow down the headlines it spiders for and to make sure you get the most relevant items. Sounds and actions can be added to alert you to which article has just been published online. NewsFan also offers a history and bookmark menu and a basic built-in Web site browser.

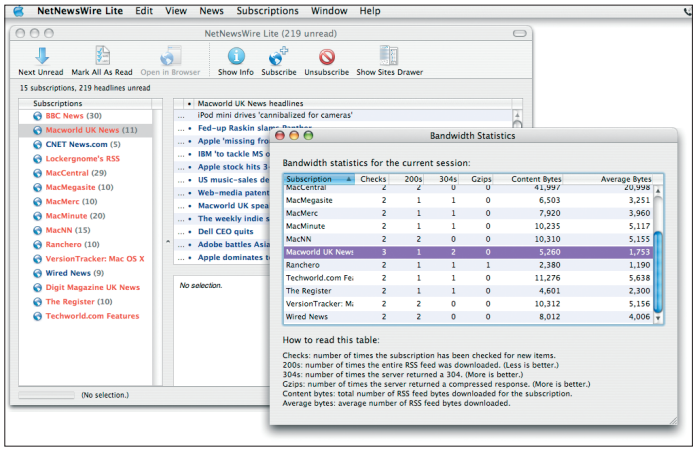
Amphetadesk is built as an open-source application, and is fast and efficient at pulling the latest hot news down from your chosen sites. When launched for the first time, it reaches for the latest data channels and then presents them in your preferred browser as a list. You can add or remove more channel addresses or browse through a ready-made list alphabetically. Although seemingly the most simple of the bunch it works the way it should but with fewer bells and whistles than the others.

Macworld's buying advice

Out of the four news-readers we looked at here, NetNewsWire is the most established and feature-rich of this selection. Amphetadesk is the slimmest of the bunch, and for programmers, is the most customizable. I like NewsMac for all its Mac-like usability and speediness.

As content syndication becomes more popular for sharing information via the Internet, you can imagine that news readers will also become more sophisticated in the future to take advantage of the development of RSS feeds. Right now for content publishers, charging for the use of feeds just wouldn't work – especially for smaller, specialist Web sites – but the likelihood of future charges for a third-party site or news-reader software publisher to include content feeds is a definite prospect.

Gillian Thompson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Show Info
Subscribe
Unsubscribe
Show Sites Drawer
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Subscriptions
BBC News (30)
Macworld UK News (11)
CNET News.com (5)
Lockergnome's RSS
MacCentral (29)
MacMegasite (10)
MacMerc (10)
MacMinute (20)
MacNN (15)
Rancher (10)
VersionTracker: Mac OS X
Wired News (9)
Digit Magazine UK News
The Register (10)
Techworld.com Features
Macworld UK News headlines
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Fed-up Raskin slams Pontius
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Macworld UK News 3 1 2 0 5,260 1,753
Ranchero 2 1 1 1 2,380 1,190
Techworld.com Fe 2 1 1 0 11,276 5,638
The Register 2 1 1 0 4,601 2,300
VersionTracker: M 2 2 0 0 10,312 5,156
Wired News 2 2 0 0 8,012 4,006
How to read this table:
Checks: number of times the subscription has been checked for new items.
200s: number of times the entire RSS feed was downloaded. (Less is better.)
304s: number of times the server returned a 304. (More is better.)
Gzips: number of times the server returned a compressed response. (More is better.)
Content bytes: total number of RSS feed bytes downloaded for the subscription.
Average bytes: average number of RSS feed bytes downloaded.

As it happens

NetNewsWire Lite doesn't offer the full blogging mode you'd get with the full $39.95 version, but as a simple straightforward headline checker it's fast and efficient.

RSS newsreaders

NetNewsWire Lite 1.0.6

Publisher: Ranchero Software
www.ranchero.com
Pros: Fast; easy to use; mature software.
Cons: Could be slow-ish via modem access.
Min specs: Mac OS X 10.2; Safari 1.0.
Price: Lite version is free; full version, $39.95.
Star Rating: ★★★★/8.9

NewsMac 3.0

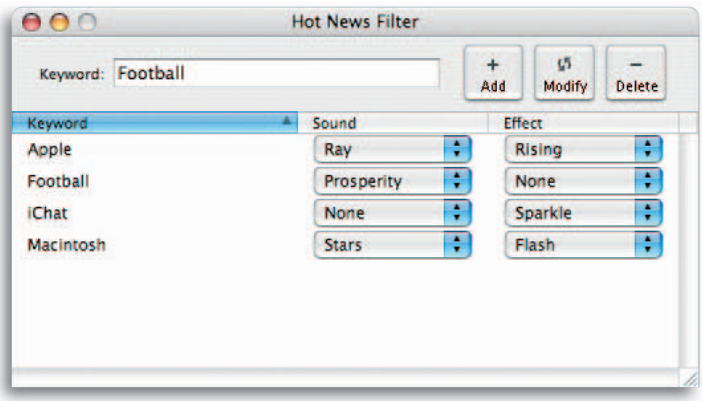
Publisher: ThinkMac Software
www.thinkmac.co.uk
Pros: Synchronizing with your iPod and Feed Finder feature a bonus.
Cons: Initially less intuitive to customize.
Min specs: Mac OS X 10.2.
Price: Donationware.
Star Rating: ★★★★/8.7

NewsFan 1.2.5

Publisher: Makie Enterprise
www.makienterprise.com
Pros: Useful history and bookmark features.
Cons: Not as slick as NewsMac. Not free.
Min specs: Mac OS X 10.2.
Price: Single user, $25; two users, $45; five users, $110; ten users, $20 each.
Star Rating: ★★★★/7.2

Amphetadesk

Publisher: Disobey
www.disobey.com/amphetadesk/
Pros: Tiny, speedy app.
Cons: Provides only the bare bones of a reader.
Min specs: Several versions available for different OSes.
Price: Donationware.
Star Rating: ★★★/6.8



Versatile DVD burner

DVD±RW 8x4x24x

Manufacturer: LaCie
www.lacie.co.uk 020 7872 8000
Pros: Fast burning for data discs.
Cons: Thanks to Apple, it's no good for iDVD movies or DVD movie playback.
Min specs: FireWire, Mac OS X (for Toast 6).
Price: £142 including VAT.
Star Rating: ★★★★/8.2

Just about every Mac now comes with a SuperDrive, and at very least a DVD-ROM drive. So DVD is the new CD, and in the next couple of years I suspect the CD will quietly head the way of the floppy. Not that it will disappear altogether, but DVD media prices are falling, and before long you'll be able to get them as cheaply as CDs. With this move in mind, we looked at the LaCie 8x DVD±RW drive. It's twice as fast as any drive you'll find in a Mac, and it has some other talents too.

The DVD format wars have made so many variations available that it's easy to get confused. I'll start with the easy bit: the RW means it can write to discs, including rewritable ones. The DVD bit means digital versatile disc – so it can read, write and erase DVD media. But here's the confusing bit: the plus and minus refers to the competing, and until fairly recently exclusive DVD formats. It all started with consumer DVD recorders: Pioneer sold DVD recorders based on the DVD-R format. The format was a ratified DVD standard, while other companies started using what was to become DVD+R, a different way of recording DVDs. DVD+R discs didn't follow the DVD standard, and therefore wouldn't play on normal DVD players. Now that a few years have passed, DVD manufacturers have patched-up their differences for the most part. Hence, DVD recorders like this one can have both plus and minus compatibility. Apple uses only DVD-R drives in its machines at the moment, though it can happily read both formats.

There are some other quirks of using external third-party drives. First, it won't let you use iDVD. Apple made iDVD to work exclusively with pre-installed DVD recording drives like the SuperDrive. This was annoying, but fair enough when iDVD was free. It stopped other manufacturers cashing in on Apple's development of iDVD, and encouraged users to buy bigger, more-expensive Macs.

Now that Apple doesn't give iDVD away free, I think you should be able to use this drive, but you can't. So it isn't LaCie's fault you can't burn iDVD discs – it's Apple's. The same goes for playing back DVD movies from a third-party drive, so you won't be able to watch DVDs with this drive either.

With all those limitations, you could be forgiven for thinking that this drive isn't that attractive a deal. It really depends on what you want to do. Professional users will love it because it will work with DVD Studio Pro, it's double the speed of anything else around at the moment, and you can back-up large swathes of data. Home users looking for less mundane and more fun uses may be less impressed.

Macworld's buying advice

This is a really impressive piece of machinery, and despite its Apple-induced limitations it's still a great deal. For backup and archiving, it makes a lot of sense for any user; for DVD production, it doubles the speed of the process, but requires DVD Studio Pro. LaCie includes the excellent Roxio Toast 6 Titanium, which costs £69 on its own – half the cost of the DVD drive. So at £142 it isn't a bad deal at all.
David Fanning

Alternative browser

OmniWeb 5.0 beta 1

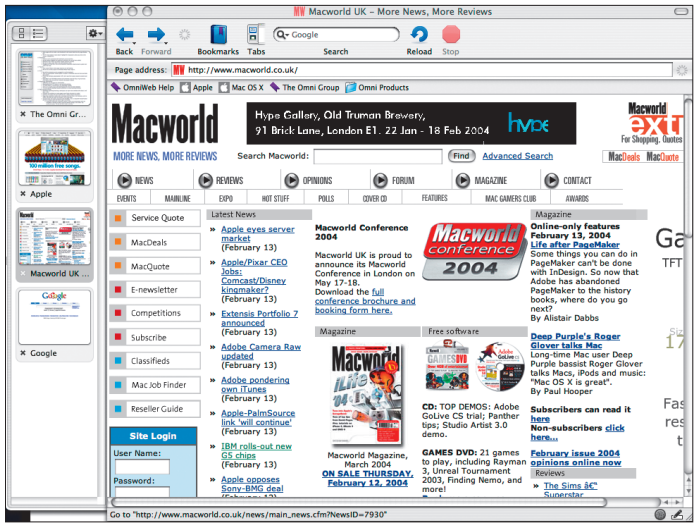
MACWORLD PREVIEW
Publisher: The Omni Group
www.omnigroup.com
Pros: Handy new workspace feature.
Cons: Strange attempt at tabbed browsing; user-interface issues.
Min specs: Mac OS X 10.2.
Price: $29.95; upgrade, $9.95.

With Web browsers now deeply in the realm of commodity software, The Omni Group is persisting with its shareware browser, OmniWeb, by releasing a public beta of the upcoming version 5.0.

OnmiWeb 5.0 beta is simple to install and get started; however, as opposed to other browsers, a window does not appear by default and must be opened in a second step. Other windowing problems include the inability to maximize to the windows on the screen properly so getting OmniWeb to maximize screen real estate involves manually resizing the browser window.

This has its advantages in that there is better visibility of each 'tabbed' page but comes at the expense of a fair chunk of browsing space. The tabs in the side drawer can be compressed so that just the page name is displayed and tabs can be easily switched with the ⌘-arrow (up or down) keyboard shortcuts. Unfortunately, closing the tabs drawer doesn't return OmniWeb to its original size and another manual resizing is required.

Also making its debut with this release is OmniWeb's "Workspace" utility that enables snapshots of browser characteristics such as pages, tabs and history. Using workspaces seems unintuitive at first, but definitely comes in handy during times of deep surfing when many tabs may have been loaded for Internet research and the like. When starting OmniWeb after workspaces have been set, it gives the option to restore a workspace, making it easy to resume browsing.


Macworld UK – More News, More Reviews
Macworld
Hype Gallery, Old Truman Brewery, 91 Brick Lane, London E1. 22 Jan – 18 Feb 2004
MORE NEWS, MORE REVIEWS
Macworld conference 2004

Like workspaces, OmniWeb now supports site-specific preferences, which also saves time when visiting many sites.

Regarding page display, OmniWeb 5.0 beta is just as good as Safari or Mozilla, and version 5.0 shows significant speed improvements over its predecessor. Also, despite being branded unstable by its makers, the beta performed well and rarely froze. The first beta of OmniWeb 5.0 is available for free download and testing, but does expire so purchasing a licence is necessary.

Macworld's buying advice

OmniWeb 5.0 looks like gaining some nifty features that will give it a leg-up. How long it stays with us will depend on the willingness of users to pay for a browser when they get Safari for free. People using the Web for research, however, may find the time-saving features of OmniWeb's workspace functionality worth the price.
Rodney Gedda

Tabs clear

This release marks OmniWeb's first attempt at tabbed browsing which, instead of an horizontal row of tabs across the top of the browser, is done by displaying thumbnail images in a side drawer.

Macworld.co.uk Subscribers can search Macworld's Reviews database online (www.macworld.co.uk), updated throughout the month

Email-server programs

4D Mail 5.3.2

Publisher: 4D www.4duk.com, 01625 536 178
Pros: Inexpensive; easy to use; integrates with existing WebStar and 4D servers.
Cons: No secure services; least-powerful spam controls.
Min specs: Mac OS X 10.2; 256MB RAM.
Price: Ten mailboxes, £95; 100 mailboxes, £175. Prices exclude VAT.
Star Rating: ★★★/5.4

Kerio MailServer 5.7.4

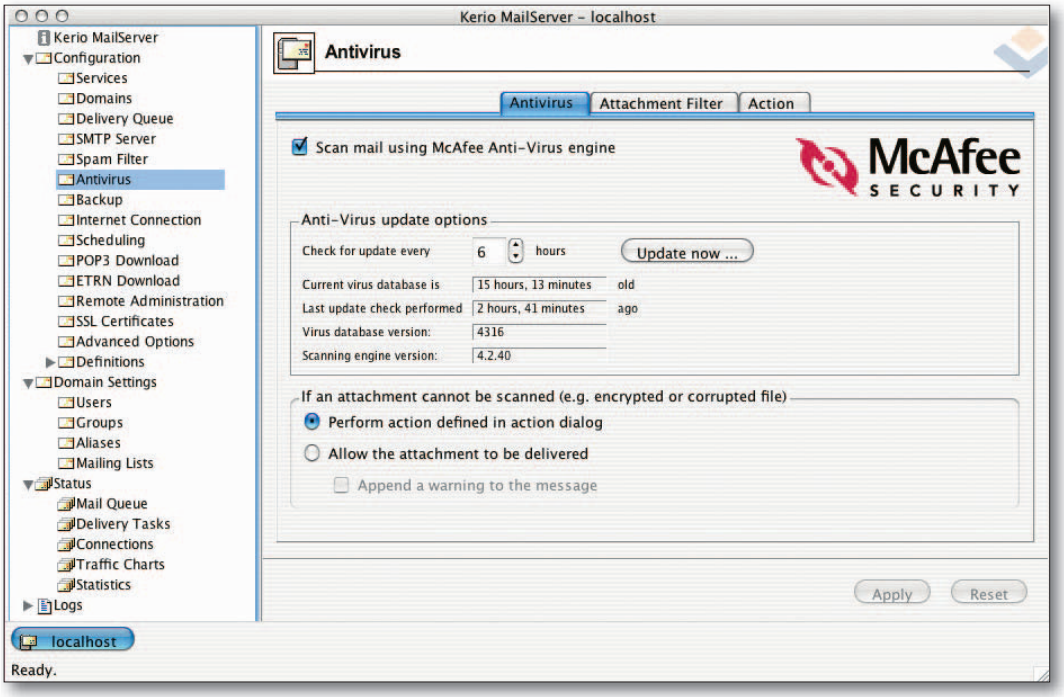
Publisher: Kerio www.kerio.co.uk, 01223 370 136
Pros: Secure by default; best-organized admin tool; great statistics reporting and logging; excellent mailing-list management.
Cons: More expensive than others per mailbox.
Min specs: Mac OS X 10.2
Price: 20 mailboxes, £235 (additional 20 users, £55); 20 mailboxes plus antivirus, £399. Prices exclude VAT.
Star Rating: ★★★★/8.4

CommuniGate Pro 4.1.8

Publisher: Stalker Software www.stalker.com, 01625 536 178
Pros: Most customizable; most built-in services; supports clustering for very large sites; good choice for large organizations.
Cons: Most confusing administration interface.
Min specs: Mac OS X 10.2
Price: 50 mailboxes and five mailing lists, $499; 200 users and 15 mailing lists, $999. Buy online.
Star Rating: ★★★★/8.0

PostOffice 3.5.3

Publisher: Tenon Intersystems www.tenon.com
Pros: Excellent mailing-list management; most control for users.
Cons: No virus scanning or secure services; weak antispam documentation.
Min specs: Mac OS X 10.3 or Mac OS X Server 10.3.
Price: 100 mailboxes and ten mailing lists, $295. Buy online.
Star Rating: ★★★★/7.4



Kerio MailServer
We were impressed by MailServer's Web client. The cleanest and best designed of the four, it's good enough to make you think of using it instead of your regular email client.

To an organization, email is arguably the most important Internet service. It cuts down the costs and hassle of communicating with people around the world. But if you want more flexibility and control over email than your Internet service provider can give you, you'll need to run a mail server on your network.

At the most basic level, a mail server helps send and deliver email messages. It accepts email messages from people who have email accounts on the server (your users), and figures out whether to deliver the messages to another user within your organization or to ask another mail server somewhere on the Internet to accept them. It also accepts email messages from other mail servers on the Internet, and it decides whether to deliver them to users on your server, reject them as undeliverable or unwanted, or relay them to yet another mail server for delivery assistance. A mail server need not be on a dedicated machine – many organizations run email, Web and FTP services from one computer – but the more RAM your mail server has available to it, the faster and more efficient your email service will be.

The stability of OS X makes it a fine platform for mail servers – it's far better than OS 9, which has less-stable memory management. We evaluated four mail-server software packages available for OS X: 4D's **4D Mail 5.3.2**, Kerio Technologies' **Kerio Mail-Server 5.7.4**, Stalker Software's **CommuniGate Pro 4.1.8**, and Tenon Intersystems' **PostOffice 3.5.3**. (Another mail server, Eudora Internet Mail Server, was released too late for inclusion in this review.) We also weighed the benefits of buying one of these products against those of using the mail-server software that ships with OS X (see "Built-in alternatives"). To simulate a medium-sized business setting, we tested each product on a Power Mac G4 by creating 50 email users, a handful of mail aliases, and a few mailing lists (on the mail servers that support them). While all four servers performed basic operations without fail, Kerio MailServer's and CommuniGate Pro's advanced features make them the best of the bunch.

The basics

Modern mail servers should let users send and receive email from a variety of applications – such as Qualcomm's Eudora, Microsoft Entourage, or Apple's Mail – and they should communicate with other servers using recognized Internet protocols. All the servers we reviewed here performed these tasks well.

With the Internet becoming a much less trustworthy place, however, a mail server also needs to protect itself against unauthorized use, spam, and viruses. But it can't completely shut itself off from the world, as telecommuters and other travellers often need to send and receive email through it, either via a secure authorized connection or through a Web interface. The more flexible your mail server, the happier you and your users will be.

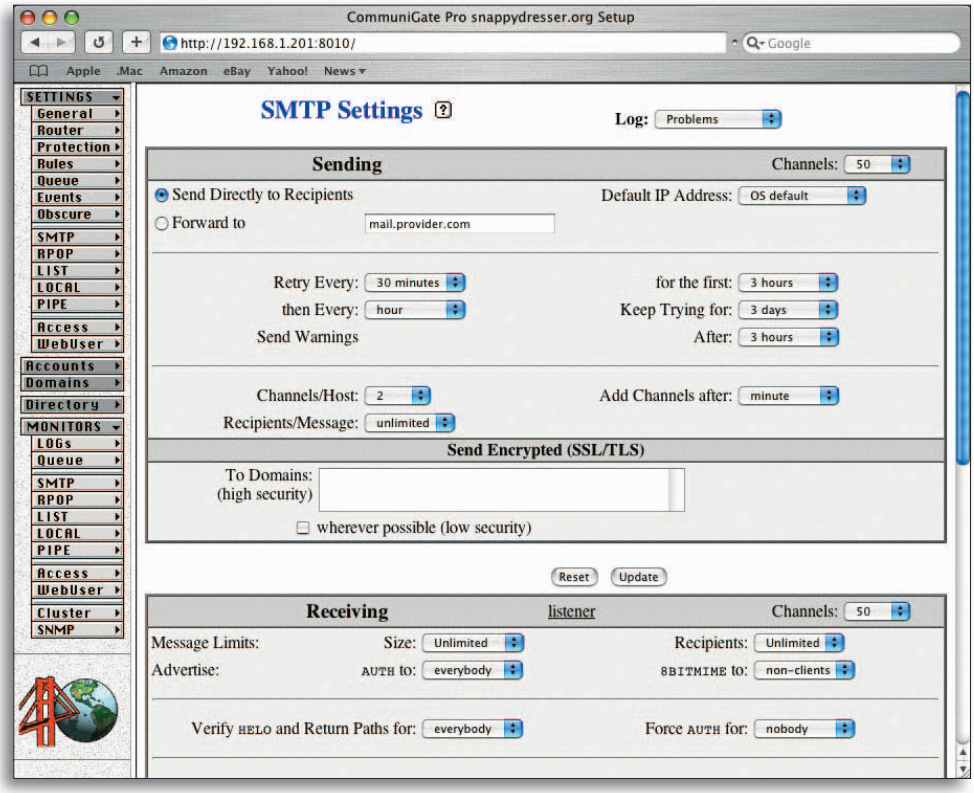
All four products were easy to install. After installation, it's time to set up the new mail server using its administration interface. MailServer's Administration Console was a wonderfully intuitive, easy-to-use OS X application. You can control all of MailServer's features through its Administration Console, which can be installed on a remote machine – so administrators don't need to be on-site to monitor it or make changes. Of the four servers we reviewed, MailServer will give you the least setup trouble.

4D Mail's administration interface is the 4D WebStar Launcher's Admin Client. This is also a well-designed and easy-to-use OS X application. 4D Mail is divided into three separate servers: the Admin Server, for controlling who is allowed to make administrative changes; the SMTP Server, which handles communication between email servers; and the Mailbox Server, which stores messages that users will read with an email client.

PostOffice uses a Web-based administration interface, so you can administer a mail server from a Web browser on any platform. This interface is as organized and clean as a Web-based interface can be; it's divided neatly into account-administration, mailing-list, and server-configuration areas. But navigation isn't consistent throughout – some pages don't include a Back or a Home link. An administrator can also configure Post-Office by sending email directly to the server, useful for administrators with portable email devices.

CommuniGate Pro also has a Web

interface for administration, and it makes the product's flexibility and complexity readily apparent. There are so many options – some that a mail administrator may never need to understand – on every screen that a novice mail administrator can easily get lost. But even a quick tour through the pages shows that CommuniGate Pro is a very powerful piece of software – this is email serving for serious pros.



Users and control

Creating user accounts was fairly easy on all four mail servers, which store user information in their databases. MailServer allows synchronization with Apple's Open Directory, a Microsoft Windows NT 4.0 domain, or Microsoft's Active Directory. And CommuniGate Pro can also integrate with an existing LDAP directory, bringing the elegance of a central user database to your email server.

Email users often want to change the way their mail is handled, such as forwarding messages to another email address or sending an autoreply message when they don't plan to check their mail for a while. PostOffice's well-designed Web interface can control most aspects of email delivery, including changing personal information and passwords. CommuniGate Pro gives users similar control over their accounts, though the Web interface here is as crowded and as complex as the administrative interface. 4D Mail and MailServer, however, don't give users any control over their own accounts.

These email servers also give users access to their email via a Web browser. 4D Mail includes 4D WebMail, a separate server that allows Web access. WebMail runs independently of the mail server, so you have to take the extra step of importing the user database from 4D Mail before enabling Web access. CommuniGate Pro's Web client is not handsome, but it's certainly feature-rich.

From one to many

When you want to send messages to multiple recipients, mail servers can provide shortcuts: they let you create aliases and mailing lists, which are two ways of sending email to one address that represents another or many other email addresses. Aliases are administrator-created shortcuts to one or more email addresses. As for mailing lists, users can manage, create, and administer them, and let anyone interested in being part of the list add themselves and control their options by sending email messages to the mail server, even if they don't have an account on the server. Mailing lists (or listservs) are a good way to let outside people participate in discussion groups, and the ease with which they can participate is important.

All four products let an administrator easily create aliases, but 4D Mail had a quirk – it wouldn't let an administrator add users to an alias until the administrator created an empty alias. MailServer and CommuniGate Pro also provide groups, special email aliases consisting only of MailServer users. MailServer, PostOffice, and CommuniGate Pro also let the administrator add new users to aliases when their accounts are created, which is a time-saving step.

Both PostOffice and MailServer provide superior control over mailing lists, with options for setting them up, as well as options for subscribing and posting, requiring moderation of posts, adding headers and footers, and enabling automatic replies to messages. These two servers and CommuniGate Pro allow people interested in your email list to subscribe, participate, and set options completely through email, keeping the need for administration to a minimum. 4D Mail doesn't provide mailing-list capabilities.

All four mail servers use standard Internet protocols to get email where it needs to go: SMTP (Simple Mail Transfer Protocol), POP (Post Office Protocol), and IMAP (Internet Message Access Protocol).

4D Mail and PostOffice use these three protocols and encrypt the POP password. But these protocols send messages in unencrypted clear text, so a machine on the same network as the server and client can potentially read information in transit. Using a secure connection to exchange passwords and transfer email is one of the simplest ways an organization can protect itself from information theft.

MailServer and CommuniGate Pro solve the security problem by including services that use the Secure Sockets Layer (SSL) protocol to encrypt information between the server and the client. Both create a default SSL certificate during installation to provide basic encryption. MailServer includes a certificate-creation wizard for making more-authoritative certificates that prove the identity of your email server to clients that connect to it.

Spam catching

With email spam and viruses at epidemic levels, mail servers need to be choosy about the mail they accept. You can't keep spammers from knocking at your door, but you should certainly be able to keep them out. 4D Mail offers several methods of identifying possible spam.

You can subscribe to DNS blacklists – centralized lists of IP addresses and domains that have been used to send unsolicited mail in the past – and reject mail sent from blacklisted addresses, sending back a short message explaining the rejection. The server can also be configured to enforce reverse IP lookup matching, which will reject mail from IP addresses that pretend to be from a different Internet domain.

4D Mail also lets you create filters that search for certain words or phrases in email

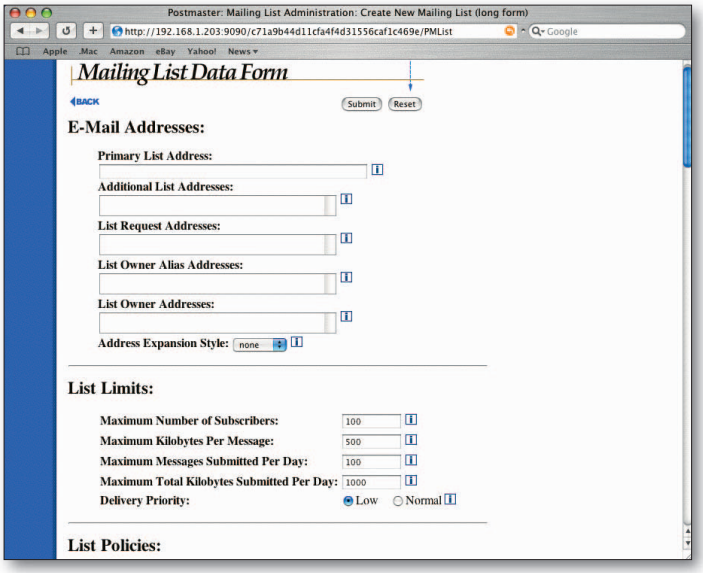
CommuniGate Pro

Like just about everything else in CommuniGate Pro, Spam-Catcher is not straightforward to configure, but it provides increased customization and control to administrators who don't mind reading extra pages in the manual and editing text files in OS X's Terminal.

continues page 60

Post-Office

Post-Office comes with ten client licenses for WebEdge. WebEdge works much like Yahoo Mail; it has a spelling checker, an address book, and a well-designed calendar.



headers (for example, they'll look for Viagra or Valium in a message's subject line). But trying to keep up with spam by manually creating email-header filters will quickly wear down the patience of an email administrator. Post-Office does 4D Mail one better by including all of 4D Mail's antispam capabilities and Spam-Assassin (www.spamassassin.org), a free, open-source mail-filter package that uses a variety of techniques including Bayesian filtering, which is based on a form of statistical analysis.

Tenon provides no documentation on customizing SpamAssassin for use with Post-Office or adjusting its rules for your mail server, but a Web search will uncover tutorials by users who have managed to customize their PostOffice-SpamAssassin setups.

MailServer includes the SpamEliminator engine, which assigns email messages a numeric spam score based on various factors. You can configure the server to tag mail with a certain score as spam, and then to either alter the subject line (for example, adding **SPAM** to alert users), or to silently discard the message.

CommuniGate Pro users can download the SpamCatcher plug-in from Stalker's Web site – you can also use SpamAssassin with CommuniGate Pro, but it's difficult to set up. Spam-Catcher is priced according to the number of messages per hour you'd like to scan for spam – for example, $279 buys you 50 messages per hour, and $559 buys you 150 messages per hour.

Macs aren't nearly as susceptible to email-borne viruses as Windows machines are, but some of your users will probably use Windows – so your mail server should protect against viruses. Many viruses can be avoided simply by refusing attachments with certain file-name extensions (.exe, .bat, and .scr, for example), but true virus-protection requires that you fully scan all email parts. PostOffice fails this test because it lacks an easy way to integrate with existing antivirus software. Tenon's Web site claims that some of its customers have created scripts for McAfee's Virex that scan email before it is delivered to users. But this method still allows viruses to be accepted by the mail server before the script runs.

Fortunately, the other three mail servers provide virus protection. 4D Mail will determine whether Virex ($35 per server for a two-year subscription from McAfee) is present during installation, and it will let you scan all the messages going through your mail server if you choose that option. CommuniGate Pro users can download plug-ins that incorporate Sophos Anti-Virus ($349 for 50 messages per hour, $699 for 150 messages per hour) or McAfee Anti-Virus ($399 for 50 messages per hour, $799 for 200 messages per hour), whose installation and configuration are as complex as SpamCatcher's but whose results are excellent.

You can download a version of MailServer with McAfee Anti-Virus already installed, with which you can automatically schedule downloads of new virus definitions. This option provides the most hassle-free virus protection of the four servers. Adding antivirus capabilities to MailServer costs between $14 per user for a 20-mailbox license and $4 per user for a 1,020-mailbox licence.

Macworld's buying advice

All four email servers will serve certain organizations well. 4D Mail will integrate with existing WebStar and 4D applications, but it has no secure services and no advanced spam control – huge drawbacks.

Post-Office is a good choice for organizations that want administration to be as hands-off as possible, and that want to let users and the people on users' mailing lists control configuration as much as possible – but we're wary of its lack of secure services and its omission of spam control. CommuniGate Pro is the best choice for very large organizations with money to spend and administrators who want the most control under the hood. And Kerio MailServer, with its dedication to security, ease of administration, and flexibility, is simply spectacular right out of the box.

Michael Genrich

Built-in alternatives: mail servers

Why spend money on one of these mail servers when you can get one free? OS X has always included a mail server. Postfix (in Panther) and Sendmail (in all earlier OS X releases) are powerful open-source mail servers that have run on Unix machines for years.

But without various add-ons and plug-ins, and a lot of obscure knowledge, you can't do much with either of them. To use them as full-fledged mail servers, you'll need to edit text configuration files, using documentation found on the Postfix and Sendmail Web sites and in the additional software packages. This will likely be daunting even for simple configurations.

There's another way to make OS X's mail server work for you – upgrade to Mac OS X Server 10.3. Of course, this removes the free aspect (it costs $999 for unlimited clients). Panther Server provides Mail Services, which includes Postfix for SMTP, Cyrus IMAP for IMAP/POP, and SSL encryption for them all.

Mail Services also adds SquirrelMail, a Web-based email client, and GNU Mailman, a powerful mailing-list package. The best news is that you control all of Mail Services' components through a GUI, staying far from the nasty innards of text-based configuration files.

You configure Mail Services through the -Server Admin interface, which allows easy setup and control of core mail services – for example, you can add authentication and secure connections to POP, IMAP, and SMTP traffic by selecting options.

Spam and virus control is provided only through DNS blacklists, but administrators comfortable with OS X's Terminal application can configure Postfix to use third-party or open-source software such as Spam-Assassin and MIMEDefang (www.mimedefang.org). Management of Mailman mailing lists is straightforward and intuitive. And SquirrelMail's clean and customizable design means that you won't spend much time explaining to email users how to read their mail in a Web browser.

Mac OS X Server 10.3 won't be an attractive option for small organizations. However, its powerful and stable email service is a very good choice for medium and large groups with hardware horsepower sufficient for running the software smoothly.

Character animation

MotionBuilder 5

Publisher: Kaydara
www.kaydara.com
Distributor: Inition, 020 7613 5004
Pros: Excellent character animation; well-focused (albeit dense), highly customizable interface; fast; nearly painless character rigging; intuitive nonlinear editor; support for major 3D packages.
Cons: Character rigging not intended for film-quality close-up animation.
Min specs: Mac OS X 10.2; 256MB RAM; 16MB OpenGL graphics card.
Price: £695 excluding VAT.
Star Rating: ★★★★★/9.2

Strike a pose

In general, animation in MotionBuilder is fast and extremely efficient. You can store and reuse poses, quickly copy and blend poses and action between characters and body segments, and apply and manipulate motion data from a variety of sources.

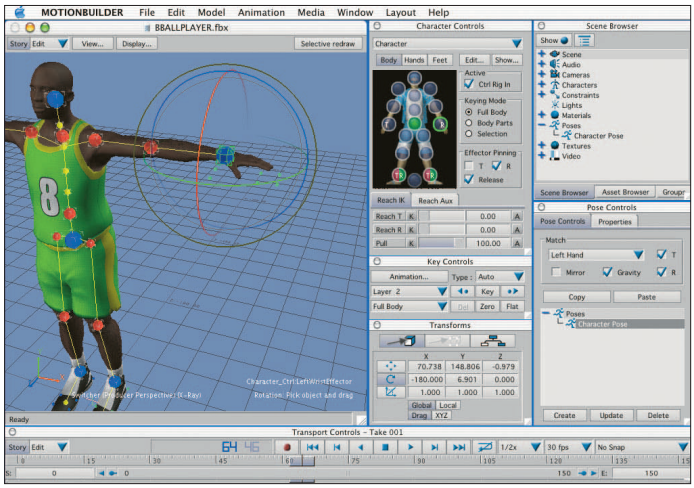
Unlike other 3D packages that focus on rendering spectacular images and effects, Kaydara's MotionBuilder 5 is uniquely suited to creating great animation of biped and quadruped characters – a task at which it succeeds admirably.

MotionBuilder can render animations, but most animators will base their work on models they've built and skinned in another application, such as Alias Maya or Maxon Cinema 4D. Then they'll end up exporting their work back into that application for final production – for rendering or for use in real-time 3D media such as video games.

While other 3D programs have decent character controls, and Maya, for example, allows extremely sophisticated (but slow) character rigging and effects for film-quality animation, no 3D program can match MotionBuilder's prowess when it comes to setting up and animating characters for game, broadcast, or multimedia applications.

Part of MotionBuilder's greatness is its superb performance. The software offers excellent interactive feedback as you manipulate characters and play animations. Most characters can be animated with real-time playback, using the latest-generation OpenGL technology (we tested on a dual-800MHz Power Mac G4 with 1GB of RAM).

MotionBuilder also permits quick set-up of characters for animating – usually one of the most technically demanding and time-consuming aspects of animation. Its Characterize command, for example, lets you apply a control rig to a character with a mouse click, and the resulting rigs are easy to manipulate, even for technically



unsophisticated animators. MotionBuilder's smooth blending of inverse- and forward-kinematic animation, and its intuitive handling of joint pinning and other common animation tasks, will make the program popular with many animators.

Although MotionBuilder is excellent for creating character animation from scratch, it's the best Mac-compatible animation application for working with motion-capture data, whether that data is gathered from professional radio, optical or magnetic motion-capture systems, or simple inputs, such as a mouse or joystick. (A major disappointment is that the Mac version lacks the Windows version's ability to generate keyframe animation based on phonemes from a voice track.)

Much of MotionBuilder's interface is similar to that of other 3D applications, but one innovative feature unique to the program is the Story tool. This nonlinear editor looks like those in many video-editing programs, but it can be used to quickly blend multiple action sequences, cameras, storyboards, audio, and other scene elements in a way that will seem immediately intuitive to a video editor. While some other 3D applications offer a nonlinear editor of one kind or another, MotionBuilder's is the most intuitive and obviously functional one we've seen.

Macworld's buying advice

MotionBuilder 5 shouldn't be your only 3D application, especially if you have to create elaborate models, scenery, or fantastic or realistic renderings. However, as a tool for creating real-time 3D character animation, it's unbeatable – and an excellent complement to most major 3D packages.
Sean Wagstaff

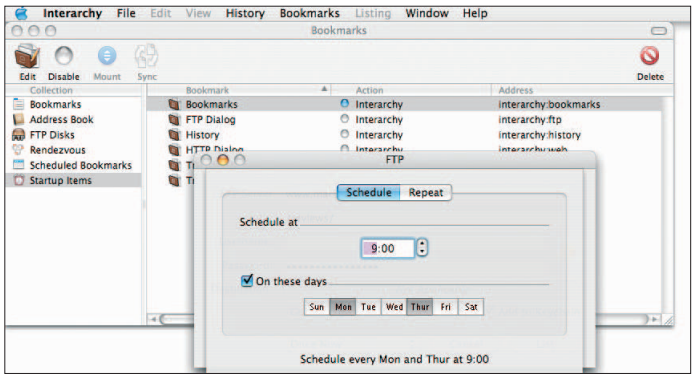
Powerhouse FTP tool

Interarchy 7.01

Publisher: Stairways Software
www.interarchy.com
Pros: Zippy; full featured; familiar Mac interface.
Cons: Pricey if you only need it for FTP; don't get your mirroring mixed up.
Min specs: Mac OS X 10.2.
Price: Single user license, $39; multiple user licenses available up to 500 users for $1,500.
Star Rating: ★★★★/8.9

Interarchy, formerly known as Anarchie, is so much more than a simple FTP program these days. Now with version 7.0 built for Mac OS 10.2 and higher, a host of features have been added and existing features improved. As well as boasting the basic functions you'd expect from an FTP program such as secure FTP, file and site mirroring, bookmarks and so on, the last few updates to Interarchy have included other network functions. These are tools such as trace route, network status, host info, graphical bandwidth monitoring, port scanning and more – building the application into a power-user's tool. You can also use it to download complete Web sites via http for offline browsing.

The speed at which Interarchy connects and lists files and allows you to up and download changes is fantastic compared with may other Mac FTP programs. Not surprising, then, that it's one of the most popular around. Tabbed browsing through bookmarks echoes the extremely popular



browsing technique found in Apple's Safari and other Web browsers. The automation feature it offers includes batching, queuing, delaying, caching, and repeat file-transfers. Support for Rendezvous and other OS X Finder features are integrated – such as drag-&-dropping URLs from a browser. In fact, you can drag-&-drop practically everything within Interarchy with the bonus of having a variety of customizable user interfaces to choose from.

Macworld's buying advice

If you need a supersonic, stress-free and sturdy tool that will help speed up your productivity then Interarchy should be one of the first you try.
Gillian Thompson

REALbasic 5.5 is the latest version of Real Software's cross-platform development environment that brings over 100 new features, improved performance, new language features, IDE (Integrated Development Environment) improvements as well as support for the creation of command-line applications and 'faceless' server applications.

It is possible to build applications for Mac OS 9, OS X, Windows, and Linux. Now that REALbasic sports a Linux compiler, developers working on the Mac or under Windows can build applications that run on Red Hat Enterprise, SuSE Linux distributions and other Linux distributions that have the GTK+ 2.0 and CUPS libraries.

Version 5.5 lets users build applications using Mach-O, the native format for Mac OS X. This means that as Apple does optimizations to make software run faster, it will be doing that for Mach-O. You can now call routines in system frameworks that were previously only accessible via a plug-in. It also means that using Mach-O, you can now create console and service applications with REALbasic. A console application is one that has no user interface and takes its instructions on the command line.

On Mac OS X this means that your application runs within the Terminal. On Windows it runs from the command prompt, and on Linux it runs from the command-line or a terminal window. A service application is a special type of console application that is meant to run even with no users logged in, allowing services such as REALbasic FTP and HTTP servers to be built.

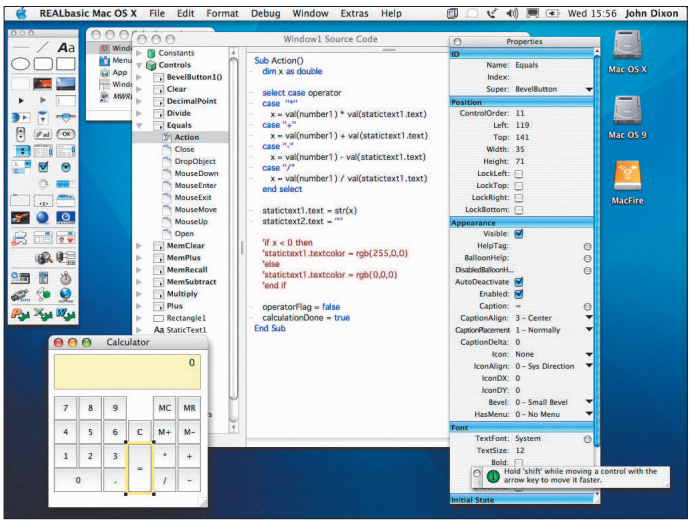
Size matters

Geoff Perlman, Real Software's CEO, has said that eventually REALbasic will 'slice and dice', leaving out parts of the framework that the application does not use – making for even more reductions in the final application size. But never mind the size – the time it takes to compile large applications has also been improved. Real Software says that version 5.5 is up to ten times faster than its predecessor.

There is now access to SOAP services with REALbasic 5.5. A SOAP service lets users call a remote method or function in a REALbasic application giving it access to live data such as stock prices, football scores and weather information. These methods can work hand in hand with the new XML parser and generator that allows for the writing and reading of XML data in just a few lines of code.

IPC (Inter Process Communication) sockets are another new feature. They behave in much the same way as a TCPsocket does with the exception that they are for local communication only. It does mean that you can start getting your REALbasic applications communicating with each other. Real Software has also introduced 'easier to use' networking classes. The basis behind these is to provide the user with easy access to a protocol that allows the sending and receiving of arbitrary messages.

If you've ever wanted to write a networked application or applications that 'self-discover' each other on a local network, you'll notice that networking under version 5.5 has never been easier.



Small is beautiful

A simple application under Mac OS X is now less than one megabyte in size. You can recompile current applications to see how much smaller they become. The size reduction comes from storing the framework compressed inside the REALbasic-made application, which is uncompressed on the fly when the application launches.

Database revamp

The single-user database engine that has always shipped with REALbasic has been replaced with a new, rewritten version. In the new REAL database, tables, columns and indexes may be added and dropped without losing or having to recopy the existing data. The new database now supports a subset of SQL/92 and SQL/99 and transactions for both schema and data changes.

As in the SQL standard, a transaction is started automatically when changes are made to the database, and ended by a 'commit' or 'rollback' statement. An SQLSelect statement returns a dynamic cursor that lets you move forwards, backwards or jump to the start or end of the returned records. The new database engine is now also included in the REALbasic standard edition.

Integration with Microsoft Office applications has depended on the use of a plug-in. According to Real Software, this caused a lot of operational overhead. Version 5.5 introduces five built-in classes related to Office.

Now, the syntax used to incorporate Office applications is almost identical to Visual Basic for Applications without using a plug-in.

The message box is no longer the preferred method for dialogs. A new messageDialog class has been introduced, which employs a message, explanation, title, icon and a number of buttons.

The dialog has been designed to be as platform compliant as possible. Under the Mac OS, for instance, if the dialog shows in the background the notification manager will inform the user that it has appeared. On Windows, the order of the buttons is more consistent with what users on that platform would expect.

REALbasic's language gets some changes and improvements: You can pass and return single and multidimensional arrays to and from a method, and new methods have been added for array-creation and -manipulation. Try and Catch blocks take some of the stress out of exception handling. One of the most welcome features is the new line-continuation character (_) to wrap long lines of code.

Macworld's buying advice

REALbasic is aimed not just at professional developers who make their living out of code but also at beginners who want to get started making their own software.

Real Software seems to have got the pricing right compared to the other development environments on offer, and has started to address the needs of beginners with the improved on-line help and tips system. However, it still needs to spend more time providing examples and tutorials that take the beginner by the hand on how to use the myriad of classes that are now available.

John Dixon

Programming tool

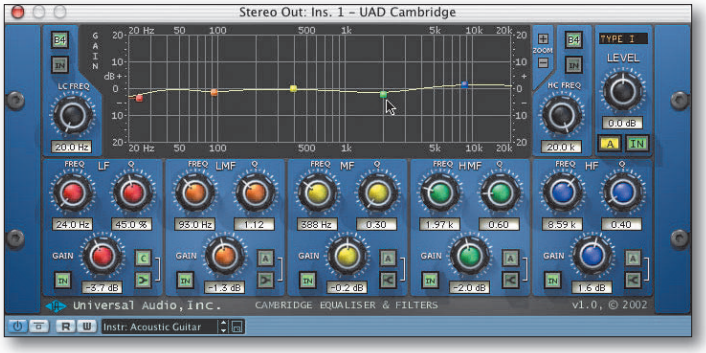
REALbasic 5.5

Publisher: Real Software www.realsoftware.com
Distributor: Nova International www.novaint.com
Pros: Very powerful application development environment; well-priced.
Cons: Poor tutorials; lack of documented examples.
Min specs: Mac OS 8.6 or OS X 10.1.
Price: REALbasic Standard, £83; REALbasic Pro, £348; academic Standard, £48; academic Pro, £208; upgrade Standard, £25; upgrade Pro, £103. All prices exclude VAT.
Star Rating: ★★★★★/9.0

Outboard filtering

Universal Audio UAD-1 Studio PAK

Publisher: Universal Audio www.uaudio.com
Distributor: SCV London, 020 8418 1470
Pros: Provides reverb, guitar effects and comprehensive channel strip effects, plus high-quality Fairchild 670, 1176, LA-2A and Pultec EQ emulations.
Cons: No third-party software available.
Min specs: G3 (processor-upgrade cards not officially supported); available PCI slot for each UAD-1 card; 128MB RAM; 50MB hard-disk space; Mac OS 9/10.2.
Price: £899 including VAT.
Star Rating: ★★★★/7.8



One of the advantages of Pro Tools TDM systems is that you get a PCI card containing DSP chips that can be used to run plug-ins, instead of expecting your Mac's CPU to do everything. But what if you are using a VST, MAS or Audio Unit compatible host application such as Steinberg Cubase or Nuendo, Emagic Logic Audio or MOTU Digital Performer?

One solution is Universal Audio's UAD-1 card. This provides you with a dedicated DSP chip-on-a-bus mastering, 7-inch form factor, PCI 2.1-compliant card. You can use this to run the supplied proprietary plug-ins – taking the load off your Mac's CPU.

The Studio PAK suite comprises 20 plug-ins including Kind of Loud's RealVerb Pro, a Channel Strip called the CS-1, and a modular guitar processor named Nigel that lets you simulate guitar amps and cabinets along with a range of typical guitar effects. Professional recording engineers will particularly value the extremely faithful digital replicas of Universal Audio's vintage analogue hardware, such as the Teletronix LA-2A and 1176LN compressors, Pultec Program EQ, and now the Fairchild 670 Compressor.

The Fairchild 670 is the Holy Grail of esoteric two-channel studio compressors and the hardware changes hands for as much as £20,000 in today's vintage gear market. But it weighs a ton with its 14 transformers, and is difficult to maintain with its 20 thermionic valves. UA's emulation provides all the features of the original while adding some useful extras.

The Studio PAK also includes the new DreamVerb and Cambridge EQ plug-ins.

The Cambridge is a high-end analogue EQ. It has five bands of EQ, switchable between parametric and shelving types, plus high- and low-pass filters.

DreamVerb is Universal Audio's flagship reverb. The interface is one of the best I've seen – especially the way you can drag a dividing line between one room shape and another, or between the materials used in the room. Pop-up selectors let you choose from huge lists of different materials and room shapes and you can blend or morph between room shapes and surfaces. Even the density of the air can be changed to simulate different ambient situations.

Macworld's buying advice

So the UAD-1 supports sample rates from 32kHz all the way up to 192kHz, and now it's available for Panther on the G5. But what it really comes down to here is whether you want this particular set of plug-ins or not. As a musician, I can live without Nigel and the Channel Strip, and there are better-sounding reverbs, but as a sound engineer there is no way I can live without these vintage studio processor simulations – they're just too darned hot!

Mike Collins

Filter this…
The Cambridge features a graphical frequency-response curve with zoom controls for fine adjustment.

Rack-replacement

TC PowerCore FireWire

Publisher: TC Electronic www.tcelectronic.com 0800 917 8926
Pros: Provides a powerful suite of plug-ins for VST/AU host software; useful selection of optional and third-party plug-ins also available.
Cons: No killer vintage emulations.
Min specs: G3; OS X 10.2; 256MB RAM; FireWire; VST- or AudioUnit-compatible host application such as GarageBand, Logic, Cubase SX, Nuendo, Live, Spark XL or Digital Performer.
Price: £999 excluding VAT.
Star Rating: ★★★★/8.2

PowerCore is an open DSP platform for processing audio from within any VST- or AudioUnit-compatible audio application that delivers quality comparable with conventional rack-mountable hardware. PowerCore FireWire has four Motorola 56K DSPs running at 150MHz; 512kWords of SRAM per DSP; a Motorola PowerPC chip running at 266MHz; 8MB DRAM for the PowerPC; three FireWire passthru connectors (to connect more than one device); and an external power supply.

The plug-ins include the 24/7∑ C Limiting Amplifier; PowerCore CL provides compression and limiting while Voice Strip is a channel strip for vocal production that includes compression, De-essing, Voice EQ, Gate, Low Cut EQ and SoftSat. Tubifex is a simulation of guitar preamp, speaker, valve power-amp, and effects. You also get a virtual instrument, the 01 Synthesizer, which emulates the Roland SH-101 synth.

For engineers, the DSound VL2 8-channel virtual valve interface adds warmth to any digital recording; Sony Oxford EQ is taken from Sony's Oxford digital console; and Oxford Inflator lets you maximize loudness without artefacts. For musicians, the Virus|PowerCore offers 16 synthesizer voices with lots of great lead sounds, while the Waldorf D-coder creates sophisticated vocoding effects. My favourite is the TC Thirty – a virtual model of the classic 1961 Vox AC30 combo amp/speaker.

A growing number of optional TC and third-party plug-ins is also available. From TC-Helicon, the Intonator fixes intonation problems in vocals, while VoiceModeler morphs voices. Master-X5 gives you five bands to work with, and TC's high-quality SurroundVerb 5.1 Reverb plug-in is available for Nuendo users. There is a Restoration Suite with a Descratcher, Denoiser and Declicker for cleaning up vinyl and tape recordings. Also, Filtroid contains a pair of analogue filter banks and Assimilator learns the EQ from favourite tracks or mixes and lets you apply it to your own.

Macworld's buying advice

How does it compare with the UAD-1? it looks a lot better than Nigel – but doesn't have as many effects. The channel strip and reverbs are similar to those supplied with the UAD-1, with a small edge on quality, but PowerCore provides the indispensable Master-X virtual Finalizer. The 24/7∑ C is a fair vintage processor – but the UA vintage devices are to die for. But what tips the balance, if you have to choose, is that PowerCore can run an increasing number of third-party plug-ins. I'd like to buy both.

Mike Collins

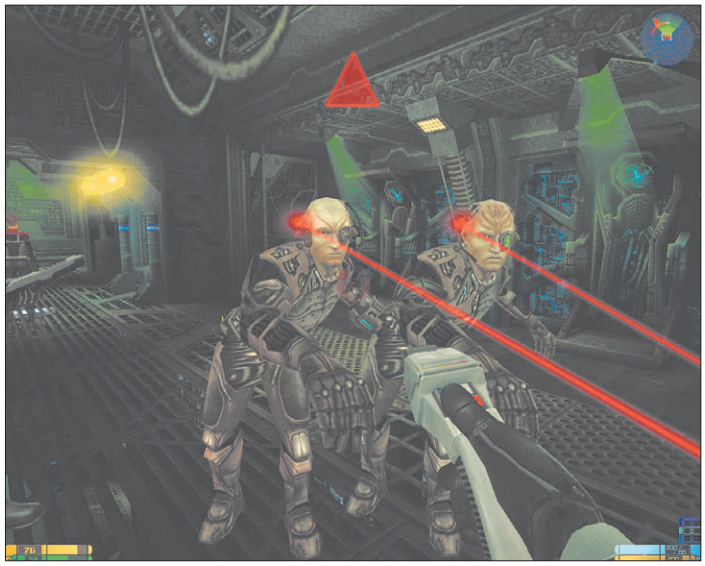
Plug it in
Included are the ClassicVerb digital reverb; the MegaReverb whose algorithms were taken from TC's M5000 reverb; Chorus Delay; and Compensator, which applies compensating delay. EQSat is the EQ stage from the Finalizer and Master-X is a virtual Finalizer.

The Star Trek science-fiction franchise seems cursed – the last few movies have been unremarkable; the current television show is tepid at best; and a majority of the related games have, in a word, stunk. So it was with no small amount of trepidation that I picked up Aspyr's newest addition: Star Trek Elite Force II. But despite some minor glitches, this first-person shooter largely manages to escape the curse – it is a worthy addition to the Mac shooter market.

Like its predecessor, this game places you in the role of Lieutenant Alex Munro, the leader of a specially trained security force known as the Hazard Team, aboard the USS Voyager. Having successfully defeated the Borg and returned home from the Delta Quadrant, you suddenly find yourself reassigned to a teaching position at Starfleet Academy – and champing at the bit for more action. Relief comes from none other than Captain Jean-Luc Picard, who needs you to round up your original team and join the Enterprise on a mission to save ships and colonies from a new wave of attackers.

Make no mistake, this is an action game, through and through. Aside from the occasional puzzle, such as using your tricorder to change shield frequencies or hacking systems to gain access to new levels, you're here for one thing – to blast almost everything that moves. And to that end, you're given a dizzying arsenal of Starfleet weaponry.

Elite Force II features a dynamic soundtrack that adjusts to the action around you; it's cleverly implemented, and it helps



heighten the sense of tension. The game's graphics look astoundingly better than its predecessor's – aliens and humans look startlingly lifelike, and environments feature a magnificent level of detail. Even better, you won't sacrifice game play for the extra visuals. Aspyr has cranked up all the action in Elite Force II. This is especially true for the multiplayer Holomatch mode, which lets players engage in arena-style combat (Windows and Mac players can square-off over the Internet or over LANs), or against computer-controlled bots.

This game does suffer from a few shortcomings. Its AI, for example, occasionally causes computer-controlled friends and foes to get confused about where to go. Repetitive voice tracks might get on your nerves, too. The biggest frustration I experienced, however, was with the level-loading design. It seemed that I had to stop every couple of minutes and wait for a new level to load – a tedious delay that broke up the pace of the action.

Macworld's buying advice

Star Trek Elite Force II is an enormous improvement on its predecessor and a welcome relief in the beleaguered franchise. Despite some shortcomings, it offers plenty of challenge for action-hungry Trekkers.

Peter Cohen

Treksploitation game

Star Trek Elite Force II

Publisher: Aspyr Media
www.aspyr.com
Distributor: Softline, 01293 827 900
Pros: Clever integration of music; improved graphics.
Cons: Unintelligent AI; cumbersome level-design leaves you waiting.
Min specs: Mac OS X 10.1.5, 733MHz G3/G4/G5, 256MB RAM, 3D-graphics card (ATI Radeon/NVidia GeForce or better, 16MB required, 32MB recommended), 1.05GB hard-disk space.
Price: £39.99 including VAT.
Star Rating: ★★★★/8.2

X

Make it so, number one

The game has enough plot twists and production details – for example, the introduction of a threatening new alien race, and voice acting from Patrick Stewart and other Star Trek veterans – to keep occasional Trekkers satisfied.

Last year, Belkin answered the call from first-person-shooter (FPS) enthusiasts and produced a game controller just for them – the USB-based Nostromo n50 SpeedPad. This year, the company has followed up with the new and improved n52 SpeedPad. And while it's still not perfect, FPS fans may find that the revamped controller can help them make some important plays.

The SpeedPad is a special kind of controller – it's neither a joystick nor a game pad. Instead, this controller uses a specialized keyboard designed specifically for the needs of FPS players.

Belkin designed the n52 to be used as a left-handed controller (sorry, left-handed mousers). With three rows of keys, a rotating scroll wheel, an eight-way directional pad, a wrist rest, and a couple of thumb buttons thrown in for good measure, the n52 provides instant access to as many keys as you are likely to need to move, change weapons, perform special actions, or activate alternate weapons modes in just about any game.

If you're already familiar with the n50, you'll find some important improvements in the n52. The new controller adds a third row of buttons for even more programmability, and an improved scroll wheel that rotates 360 degrees – as opposed to the throttle like low-to-high setting on the n50.

Although the n52 is a bit bigger and bulkier than the n50, I found it most comfortable. Some of the credit goes to the controller's adjustable (and removable) wrist rest, a carryover from the n50 design. The keys feel a bit flimsy compared with those on a Mac keyboard, but they're good for a game controller and solidly built for regular use.

Belkin says that you can program as many as 104 functions on the n52 (using shift states that allow you to program multiple functions for a single button). This is accomplished with software, which you'll have to download from Belkin's Web site. The software lets you create individual SpeedPad configurations for the games you play, mapping keys to individual functions within the game. As I noted about the n50, I wish Belkin offered prebuilt profiles for specific Mac games (something they do offer for Windows users). Still, the software works well and the device looks cool.

Macworld's buying advice

If you're looking to improve accuracy and performance in 3D shooters and other keyboard-heavy action games, the Nostromo n52 SpeedPad may be right for you. Just plan on doing a bit of work to set it up to your liking.

Peter Cohen

One-handed gaming

Nostromo n52 SpeedPad

Manufacturer: Belkin
www.belkin.co.uk 00800 223 5546
Pros: Convenient key-configuration means greater precision in fast-paced action games.
Cons: Configuration software lacks Mac presets.
Min specs: Mac OS 9.0.4 or OS X.
Price: £29.99 including VAT.
Star Rating: ★★★★/8.6

9

X

X files

With all the buried features and subtle changes hidden in Mac OS X 10.3 Panther, you'd think that Apple CEO Steve Jobs was running a covert operation. Sure, you know about Exposé and Fast User Switching – but look deeper, and you'll find that there's much more to this cat than meets the eye. To get you the dirt on your new OS, we sent out our own secret agents – men and women who get paid to dig through the inner recesses of OS X. And what they discovered surprised even us.

From working more efficiently, to restoring missing standbys, to uncovering hidden features, we'll let you in on some of Panther's best-kept secrets.

Get smart: 15 ways to work more efficiently

As with our brains, few of us use our Macs to their full potential. We fumble through dialog boxes, repeatedly resize and relocate our windows, and generally work hard instead of working smart. But it doesn't have to be this way. To quickly boost your Mac IQ – while also shaving valuable time off your workday – try out a few of these essential shortcuts for managing files, navigating windows, and automating repetitive tasks.

Prioritize label colours

For some Mac users, Panther's best attribute will be the long-awaited return of Labels – a feature that was stripped from previous versions of OS X. Labels let you selectively colour-code files and folders so you can quickly identify important or related items in the Finder. To assign a label, Control-click on the item in the Finder and choose a colour from the Color Label contextual menu. To quickly sort files according to label colour, just add a Labels column to the Finder's list-view mode. (Select View Options from the View menu and activate the Label option under Show Columns.) When you click the Finder's new Label column header, all files and folders of the same colour will appear together.

However, the Finder's default sort order for Labels isn't always ideal – it sorts according to the label's name, not according to the order of the colours as they appear in the Labels menu. So even though you've chosen the colour red to denote your most-important files, say, those files will be buried in the middle of your list. To ensure that a particular label colour always ends up on top, use a numerical prefix when renaming your labels. Go to the Finder's Label preference pane and type 1. Top Priority in the text field next to the red label. The next time you sort by Labels, your most important files will jump to the top (see "Colour my world").

Rob Griffiths

Use title-bar proxies

You may already know that you can ⌘-click on a document's or a Finder window's title-bar icon to see a pop-up menu of the item's path. It's less commonly known, however, that you can use that icon as a draggable proxy for the folder or document. By clicking and holding on a window's title-bar icon, you can manipulate it just as you would any Finder icon. For example, click on the small page icon in the title bar of an open Microsoft Word document, and you can quickly drag the document to a new location on your hard drive, option-drag it to create a copy of it, or ⌘-option-drag it to create an alias of it.

In fact, you can even drag this proxy to another application – dropping it either on an open window or on a Finder or Dock icon – to open the document in that application. For example, if editing a Web page in BBEdit, you can drag the document's title-bar icon to any Web

browser to quickly view your work. There is one thing to remember when you're using this trick on open documents: you'll need to save all changes to the document before OS X will let you drag the file's icon to another location.
Dan Frakes

Resize all column widths

In OS X 10.3, Apple has changed the Finder's default column-view behaviours. Now when you click and drag the icon at the bottom of a column divider, only the preceding column is resized. This is useful if you need to quickly expand a truncated file name. If you want to resize all the columns at once – to fit more columns in a window, for example – hold down the option key while adjusting the column width.
Rob Griffiths

One-click printing

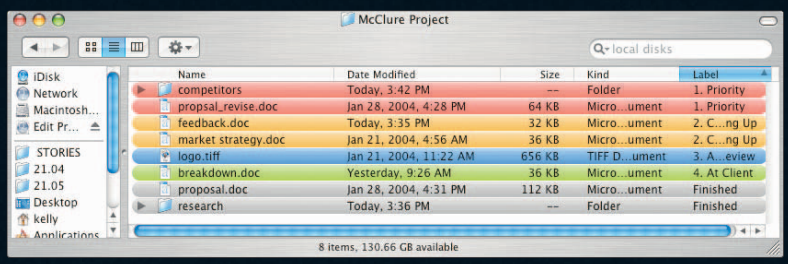
If you need to print a school assignment or a project file before running out the door, there's no reason to waste time waiting for the application to start up. Thanks to Panther's revival of desktop printers, you can now drag the needed file onto your printer's icon and start printing immediately. (Some applications will still require that you go through a Print dialog box.) To create a desktop printer, launch Printer Setup Utility (Applications: Utilities), select the desired printer, and choose Create Desktop Printer from the Printer menu. The resulting dialog box will ask you to name the printer and to specify a location for the printer's icon. Despite the command's name, you don't have to place the desktop printer on your desktop. You also can drag the printer icon into your Dock or to the Finder window's sidebar for even easier access (see "Print on demand"). Double-click the printer icon to view your print queue and to manage print jobs.
Dan Frakes

Work with Docked items

Panther makes it easier than ever to open, move, or duplicate files and folders stored in the documents side of the Dock. For example, say you keep an often-needed PDF

continues page 70

Colour my world
Use numbers in label names to control the sort order and make sure priority files (here, in red) always jump to the top.



Keep to the keyboard

One of the most effective ways to steal back precious time – and reduce the likelihood of repetitive strain injuries – is to stop reaching for your mouse. All that clicking, dragging, and scrolling can seriously add up over the course of a day – time better spent knocking back lattes at the coffee shop.

In Panther, you can access almost any menu, command, or dialog box without ever taking your hands off the keyboard. For example, pressing ⌘-, (comma) calls up the Preferences window for the current application, and pressing ⌘-T automatically adds the selected item to the Finder's sidebar. (For a comprehensive list of systemwide keyboard shortcuts, open Mac Help from the Help menu and search for Keyboard Shortcuts.)

Here are quick ways to harness the power of Panther's keyboard shortcuts:

Navigate the Find dialog box

If you use the Search In Specific Places option in Finder's Find dialog box – to limit a search to a specific drive or folder, for instance – you can press Tab to highlight search locations, and the spacebar to turn the locations on and off. Once you've indicated which places to search, press Control-Tab to leave the Specific Places menu and jump to the next input field.

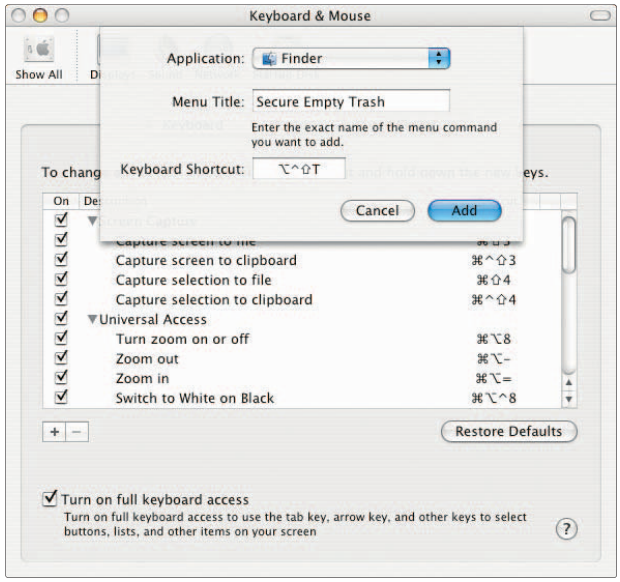
TIP! Easy access

Pressing the Tab key in most dialog boxes will move the cursor to the next input field. To quickly navigate other interface elements – such as buttons, pull-down menus, and so on – press control-F1 to activate Full Keyboard Access mode. Now when you press Tab, you'll cycle through all dialog-box items. Press control-F1 again to exit this mode.

Kelly Lunsford

Stop scrolling through menus

You probably know that you can quickly navigate through open Finder windows by pressing the first couple of letters in the name of any listed folder or file (press D-O to highlight your Documents folder, for example). In Panther, this rule also applies to contextual menus, Open and Save dialog boxes, and most application menus. Control-click on any item in the Finder and press G-E to open a Get Info window, M-A to make an alias, and so on.


Keyboard & Mouse
Show All
Application: Finder
Menu Title: Secure Empty Trash
Enter the exact name of the menu command you want to add.
Keyboard Shortcut: ⌥^⇧T
Cancel
Add
Capture screen to clipboard ⌘^⇧3
Capture selection to file ⌘⇧4
Capture selection to clipboard ⌘^⇧4
Universal Access
Turn zoom on or off ⌘⌥8
Zoom out ⌘⌥-
Zoom in ⌘⌥=
Switch to White on Black ⌘⌥^8
Restore Defaults
Turn on full keyboard access
Turn on full keyboard access to use the tab key, arrow key, and other keys to select buttons, lists, and other items on your screen

Easy and secure

Using the new Keyboard Shortcuts area of the Keyboard & Mouse preference pane, you can define keyboard shortcuts for any menu in any application – including the Finder.

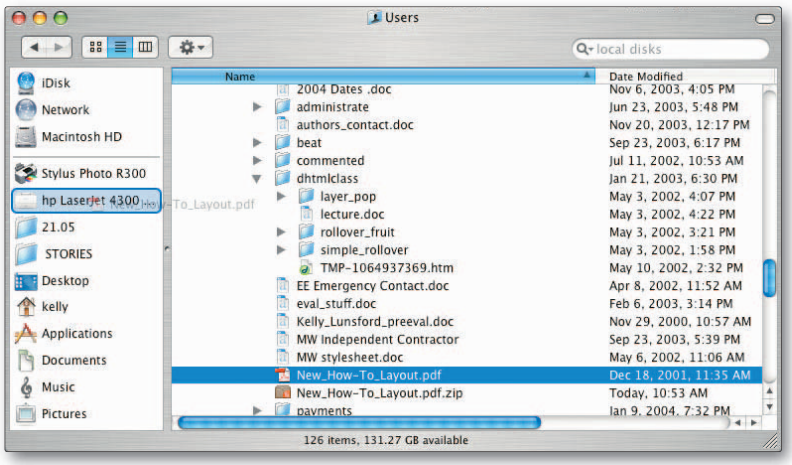
Customize keyboard shortcuts

Keyboard shortcuts won't help much if you can't remember what they are, or if they don't exist for the commands you use most often. Well, no more excuses: Panther lets you define shortcuts for almost any command in any application. For example, the Finder's Secure Empty Trash feature – which writes over deleted data so that no one can retrieve it – is very useful, but it isn't accessible via a keyboard shortcut. However, a quick trip to the Keyboard Shortcuts area of the Keyboard & Mouse preference pane can take care of this oversight.

In Keyboard Shortcuts, click the plus-sign (+) button to add a new shortcut. In the resulting dialog box, select Finder from the Application menu and, in the Menu Title field, enter the name of the command you want to assign a shortcut to – in this example, you'd type Secure Empty Trash. (You must type the exact name of the command as it appears in the Finder.) Then decide what keyboard shortcut you'd like to use. The challenge is finding a shortcut that hasn't been assigned to something else. In our example, we used Control-Shift-Option-T (see "Easy and secure").

Once you've found an available keyboard shortcut, click the Add button. Applications must be restarted before you can use their new keyboard shortcuts. With a Finder shortcut, you'll have to log out and log back in (or use the Activity Monitor utility to restart the Finder).

Rob Griffiths


Users
local disks
iDisk
Network
Macintosh HD
Stylus Photo R300
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Documents
Music
Pictures
Name
Date Modified
2004 Dates .doc Nov 6, 2003, 4:05 PM
administrate Jun 23, 2003, 5:48 PM
authors_contact.doc Nov 20, 2003, 12:17 PM
beat Sep 23, 2003, 6:17 PM
commented Jul 11, 2002, 10:53 AM
dhtmlclass Jan 21, 2003, 6:30 PM
layer_pop May 3, 2002, 4:07 PM
lecture.doc May 3, 2002, 4:22 PM
rollover_fruit May 3, 2002, 3:21 PM
simple_rollover May 3, 2002, 1:58 PM
TMP-1064937369.htm May 10, 2002, 2:32 PM
EE Emergency Contact.doc Apr 8, 2002, 11:52 AM
eval_stuff.doc Feb 6, 2003, 3:14 PM
Kelly_Lunsford_preeval.doc Nov 29, 2000, 10:57 AM
MW Independent Contractor Sep 23, 2003, 5:39 PM
MW stylesheet.doc May 6, 2002, 11:06 AM
New_How-To_Layout.pdf Dec 18, 2001, 11:35 AM
New_How-To_Layout.pdf.zip Today, 10:53 AM
payments Jan 9, 2004, 7:32 PM
126 items, 131.27 GB available

Print on demand

Desktop printers don't have to live on the desktop. We added our printers' icons to the Finder's sidebar.

form in your Dock. In Panther, you can quickly open that file in Apple's Preview, or in Adobe Acrobat or Photoshop, and can even attach it to an email message, by ⌘-clicking its Dock icon and dragging it to the desired application. If you press the option key while ⌘-dragging the icon from the Dock, Panther will create an alias of the item in the currently selected folder. To fully copy the item into the selected folder, ⌘-click on the Dock icon, drag it a short distance from the Dock, press the option key, release the ⌘ key, then let go.

Rob Griffiths

Automate Finder tasks with Script Editor

Even productive Mac users spend an inordinate amount of time performing the same small tasks again and again – opening folders, changing views, and so on. Although AppleScript, Apple's built-in scripting language, can help by automating these routines, its unintuitive syntax often discourages beginners from taking advantage of its powerful features. In Panther, however, Apple has helped

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to break down this barrier by making the Finder a recordable application – so you can use Script Editor to record your actions and let it create the necessary script for you.

For instance, if you like to leave your Documents folder sorted by name but often need to find the most-recent files in it, you can record a script that automatically opens the folder and sorts it by date. To do this, launch Script Editor (in Applications: AppleScript) and click the Record button. Switch to the Finder, and then hold down the ⌘ key while double-clicking on the Documents folder to open it in a new Finder window. Set the window to list-view mode if necessary, then click the Date column header. Switch back to Script Editor and click the Record button again to stop recording. You should see a completed script – reflecting the actions you just performed – in the Script Editor window. Select File: Save, give the script a name (View Docs By Date, for example), set the File Format menu to Application, and then select a location for your saved script.

To use the script, just double-click its name – the Documents window should then pop up and sort itself by date. You may even want to drag the script to the Finder's sidebar window for easy access.

Not every action in the Finder is recordable. If you don't see an action you've taken reflected in the Script Editor window, it isn't supported.

Rob Griffiths

Jump to any System Preferences pane

If you spend a lot of time in System Preferences – switching between networks, starting and stopping services such as file sharing, or changing your screen saver – here's a way to avoid opening the entire System Preferences window and instead jump directly to the preference pane you need.

Open System Preferences; then hide the application by pressing ⌘-H. (Unlike previous versions of OS X, Panther automatically quits System Preferences when you close the window.) When you need to return to a preference pane, just click and hold the System Preferences Dock icon: you'll be able to choose from a pop-up list of every preference pane (see "Jump to it!").

Rob Griffiths

Drag images from Preview's drawer

In earlier versions of OS X, Preview offered a great way to quickly view several images at once – a side drawer popped out from the window and displayed thumbnails of each selected image, so you could jump from one to the next for fast comparison. But if you then wanted to refine those photos in an image editor such as Photoshop, you had to close Preview and locate the files in the Finder. In Panther, you can simply drag thumbnail images from the drawer, just as you would drag icons in the Finder. Drag them onto the Dock's Photoshop icon, and the images open in Photoshop, for example, or drag them into a Finder window to copy them.

Rob Griffiths

Quicker Googles

If you're using Safari and you come across a word or phrase that you don't understand or that you want to know more about, you can use it as a Google search term without retyping it in Safari's search box. Just highlight the word or phrase with the cursor, control-click, and choose Google Search from the contextual menu. Voilà! Up pop your search results. This great feature isn't new, but it's often overlooked.

Kelly Lunsford

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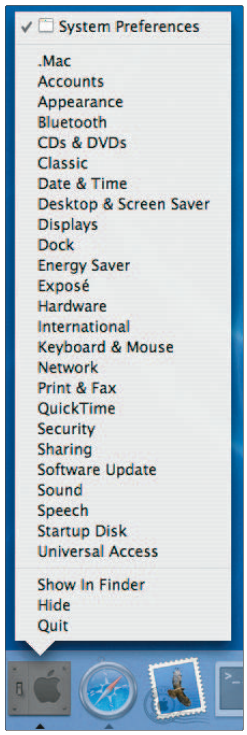


Jump to it!
Use the Dock's new System Preferences icon menu to jump directly to any preference pane.

Be more efficient with Exposé

Exposé, OS X's new window-management system, lets you do truly useful things – such as clearing away all windows to access a desktop file, viewing all open windows at once, and bringing forward all of an application's windows. But if that's all you use Exposé for, you're not tapping into its full power.

Quickly change applications

Here's a quick way to bring all windows of a buried application to the foreground: After activating Exposé in either All Windows (F9) or Application Windows (F10) mode, press ⌘-Tab to bring up the application switcher – a transparent list of all open applications (see "Switch it up"). While holding down the ⌘ key, repeatedly press Tab to select the desired application. All of that program's open windows will immediately jump to the foreground – still in Exposé mode. This is especially useful when you've a ton of open windows to sort through.

Hidden files and hidden windows

Say you want to move a desktop file – a screenshot or a file downloaded from the Web, for example – into a specific Finder window. But other windows cover both the file icon and the destination window. With Exposé, this isn't a problem at all. First, clear away all windows by pressing F11, the default Desktop key. Once you can see the desktop, click on and hold the item to be filed; then press F9, the All Windows key. Drag the item onto the miniaturized destination Finder window and press F9 again. When the Finder window springs to the foreground, release the mouse button to drop the selected file into the window.

Combine Stickies and Exposé

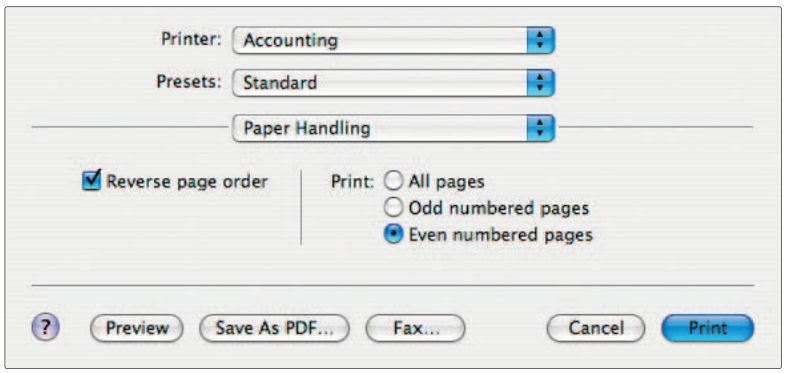
If you use Stickies to store important snippets of information but don't like all the room they take up on your desktop, Exposé can help you consolidate these electronic notes. First, press ⌘-M to minimize each Stickies window to a single line of text. Pile the minimized notes directly on top of one another so only the top note is visible.

When you need to access the information in one of the notes, just press F9 and then press ⌘-Tab (or just Tab) to switch to Stickies. Exposé will separate the stacked notes, making it easy to find just the information you're looking for. Select the appropriate note in Exposé to bring its window to the top of the pile.

Rob Griffiths

Switch it up
Panther's application switcher (⌘-Tab), lets you quickly move to a hidden program without mousing over the dock.

Secret service:
16 things you didn't know your Mac could do



Double up
Using the new Paper Handling options in OS X 10.3, you can easily create double-sided output.

Think you've already figured out everything there is to know about OS X? You may be in for a surprise. Even Apple doesn't seem completely sure how many new features Panther has – the company says only that the number is "over 150." Here are a few of our favourite features that tend to go undetected.

Create double-sided printouts

For people whose printers don't have duplexing features – which are generally sold as expensive add-ons – creating tree-saving, double-sided prints used to be an exercise in frustration. That's because OS X didn't offer an automatic way to print only odd or only even pages. Panther simplifies this process with a new Paper Handling option.

Different printers process pages in different ways, so you should experiment with a small sample document before tackling your entire 1,000-page thesis. In the standard Print dialog box, click the Copies & Pages menu and select Paper Handling. Activate Reverse Page Order, and then choose Even Numbered Pages as the Print setting (see "Double up", above.)

Print your job, collect the output, and then return the pages to your printer's manual feed tray or to the main feed bin – in rare cases, the latter option may jam the printer. Open the Print dialog box again, return to the Paper Handling menu, and choose Odd Numbered Pages. Depending on how your printer feeds paper, you may need to leave the Reverse Page Order option selected.

Rob Griffiths

Completely erase disks

When you reformat a disk – a hard drive, a Zip disk, a FireWire drive, a CD-RW, and so on – you don't actually erase the physical data on it. All you really do is erase the disk's catalog, the information that tells the operating system what's on the disk. Anyone with basic disk tools can still read the entire contents (excluding any data you've written over).

For a clean sweep, launch Disk Utility (Applications: Utilities), highlight the disk you want to erase, select the Erase tab, and then click on the Options button. In the Options screen, enable either the Zero All Data option or the 8 Way Random Write Format option. Reformatting with one of these options enabled will take a substantial amount of time, but you can rest assured that your private data will be thoroughly erased.

Rob Griffiths

Presentations and Fast User Switching

Do you give presentations that require switching between applications – for example, from a presentation program to a demonstration of your company's software, and then back again? If so, you can use Panther's Fast User Switching feature to set up a seamless performance.

Start by creating a new user account (in the Accounts preference pane) for the software demonstration – be sure to activate the Enable Fast User Switching option under Login Options. Then log-in as the new user and set-up the desktop, Dock, preferences, and your demo application exactly as they should be when you switch to your demo during your presentation.

When it's time to give your presentation, log in as the primary user and begin the presentation in Keynote, PowerPoint, or another program. When you reach the spot in your presentation that requires the demonstration, press the escape key to temporarily pause the presentation; then open the Fast User Switching menu in the top right corner of your screen, and log in as the new user. The screen will rotate to place you right at the necessary point in your software demonstration. When

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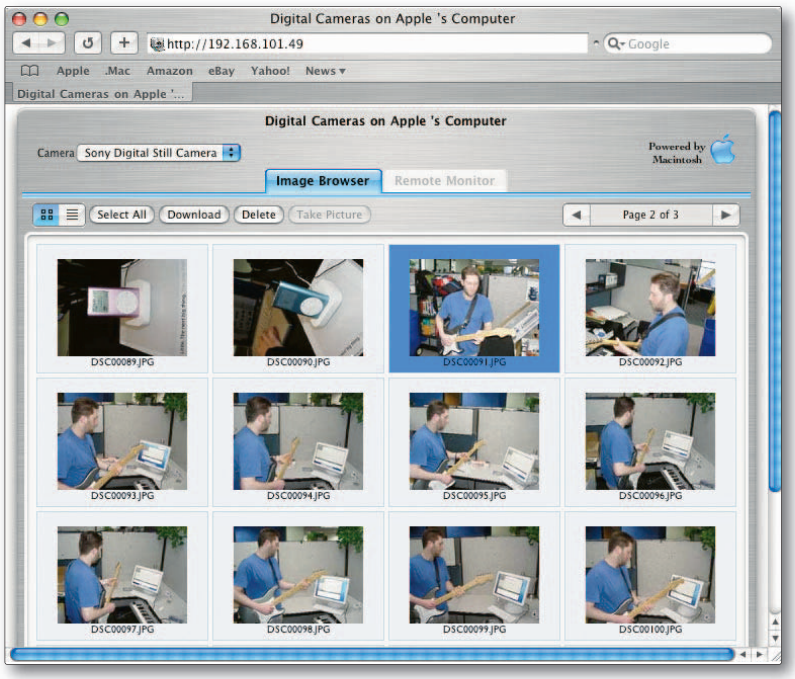
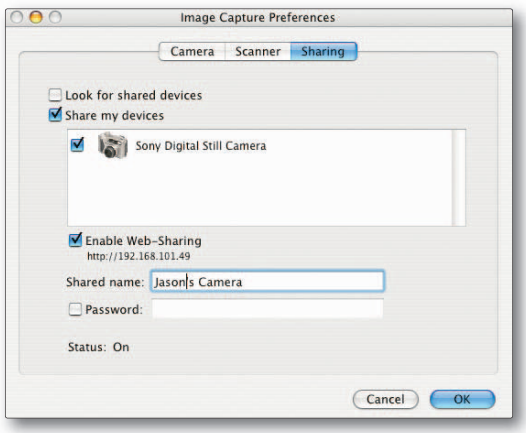
Remote control
When remote users type the appropriate IP address into their Web browser, they'll be able to view, download, and in some cases even take pictures with your shared device.





Share it
In Panther, you can set-up ImageCature to share devices such as cameras and scanners over the Internet.

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Fix faxing in Panther

Panther includes a new feature that lets you send and receive faxes from your modem-equipped Mac. (You can turn this feature on from the Print & Fax preference pane.) This is a welcome addition, but it doesn't work as well as it might. Here are three easy ways to improve Panther's faxing know-how.

Receive fax notification

By default, your Mac doesn't notify you when you receive a fax – a frustrating omission if you're waiting for an important document. To correct this oversight, control-click on the folder you store your faxes in (check your Print & Fax preference pane if you're not sure where this is), and select Enable Folder Actions from the resulting menu. Then control-click on the folder a second time and select Attach A Folder Action from the menu. In the Choose A File window, select the add – new item alert.scpt file and click the Choose button.

The next time you receive a fax, a message will pop up offering to let you view it. Click Yes to open the Faxes folder, where the received fax (saved as a PDF) will be already selected.

Squash the email bug

Although the Print & Fax preference pane includes an option for emailing received faxes, this feature may not work if you've upgraded to Panther (instead of performing a clean installation). If you've configured Panther to forward faxes to you via email but that email never arrives, you can put things right with Rodney Yager's free FaxEmailHelper (**www.rwts.com.au/faxemailhelper**). FaxEmailHelper not only ensures that the mail goes through, but also lets you specify the email address the fax is sent from (to keep the message from being rejected for bearing an invalid address). It can even help test the emailing process by simulating a received fax.

Distinctive-ring fax answering

Some telephone companies offer a Distinctive Ring service, which lets you assign as many as four separate phone numbers to a single phone line – each with its own ring tone. If you've signed up for this service, you may be able to use it to assign one of these distinctive rings to Panther's own fax service, and prevent the OS from trying to pick up regular phone calls. (Note that not all Apple modems support this feature.)

To enable Distinctive Ring answering, launch Terminal (Applications: Utilities) and type sudo pico /usr/bin/fax. In the resulting fax-configuration script, look for the line that reads INIT="-iZ -i&FE0&D2S7=120 -i&C0". (This will be line 209 unless you've previously modified the program.)

Replace this line with one that reads:

INIT="-iZ -i&FE0&D2S7=120 -i&C0-SDR=n"

Replace the n at the end of the new line with the actual Distinctive Ring number assigned by the telephone company.

Typically, 1 is the normal ring, 2 is the first distinctive ring, and so on. Then save and quit the editor. From now on, Panther will answer the phone only when it hears the distinctive ring pattern.

Chris Breen, Rob Griffiths

you're done, simply switch back to the primary user and click on the slide-show button to pick up where you left off.

If you have multiple demonstrations within your presentation, you can create a unique user for each one – allowing perfect customization and smooth performance for each segment.

Rob Griffiths

Make user-switching even faster

To make the switch between different active users even smoother, you can eliminate the standard Login window and avoid entering a password. Removing this safeguard will make your computer less secure, but doing so can be a real boon if you're a single user who regularly switches between different accounts – as described previously.

To skirt the Login window, make sure all users but Administrator are logged out, and then open the Accounts preference pane. Select a user from the Other Accounts list, highlight that user's password, and press the delete key. You'll be prompted for your Administrator password. When you select another user or try to close the System Preferences window, you'll see a message that reads: "You did not enter a password for this user account. Are you sure you want to do this?" Panther asks this question for good reason: leaving the account without a password allows anyone to log into your Mac and perform Administrator operations such as installing software.

Christopher Breen

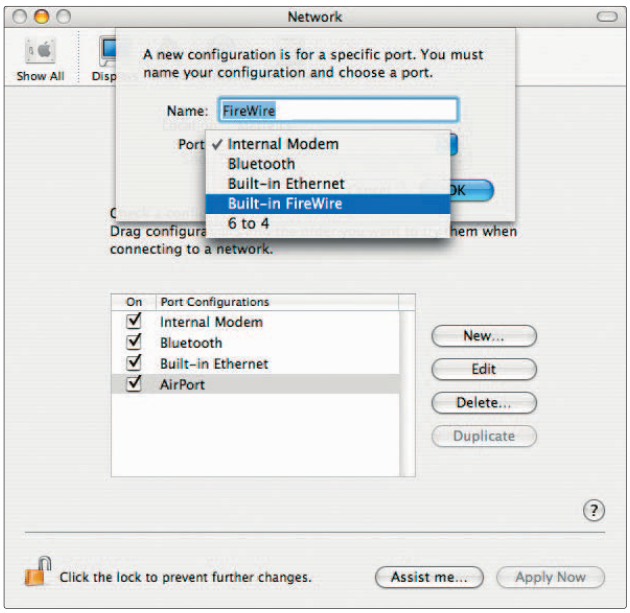
Network machines via FireWire

If you need to connect two Macs running Panther, but you don't have an Ethernet cable handy, don't sweat it – you can use your trusty FireWire cable instead. Here's how:

Open the Network preference pane, click Configure, and then select Network Port Configurations from the Show pull-down menu. Click the New button, give the new configuration a name (FireWire, for example), and then select Built-in FireWire from the Port box (see "Network via FireWire").

Repeat these steps on the second Mac. When you're done, plug the FireWire cable into each machine, and make sure that the Personal File Sharing option (in the Sharing preference pane) is selected on both machines. To share files between the machines, switch to the Finder, select the Network icon in the sidebar, and then click on the Servers icon. You should see the other machine's name in the server list. Double-click the computer's name and enter a valid user name and password. You're now connected to the other machine.

Rob Griffiths



Network via FireWire
With OS X 10.3's FireWire-over-IP networking, anyone with a FireWire cable can make a network of 10.3 Macs.

Alternative screen-lock method

If you're concerned about prying eyes while you're away from your desk, you can make

OS X require a password to unlock your screen saver (do this in the Security preference pane). However, this means you'll need to enter a password every time your screen saver takes over – even if you're just sitting at your desk dealing with paperwork. But there is a way to quickly lock your screen only when you're stepping away from your desk: use Panther's Fast User Switching feature.

Open the Accounts preference pane, click the Login Options item at the end of the user list, and then activate the Enable Fast User Switching option. (You can do this even if you're the only user on your machine.) Your user name will appear at the top right of the main menu bar.

When you want to lock the screen, click your user name in the menu bar and select Login Window from the pull-down menu. Your screen will immediately switch to the standard OS X Login window. Enter your password when you return to your desk, and you'll be back at work right where you left off.

For even greater security, return to Login Options in the Accounts preference pane and set the Display Login Window As menu to Name And Password. Anyone attempting to use your machine will have to supply both your user name and your password.

Rob Griffiths

Take pictures remotely

With iPhoto 4, you can easily share photo libraries with anyone on the local network. But what if you need to share photos with someone who isn't on your network – a client or a family member in another city, for example? If your Mac has its own, publicly accessible IP address, you can share a digital camera's contents over the Internet.

With a camera connected and turned on, choose Image Capture: Preferences, click the Sharing tab, and select the Enable Web-Sharing option. Note the IP address listed under this option (see "Share it"). Anyone on the Internet can open Safari, type that IP address into the address bar, and peep at the contents of your Mac's digital camera.

In some cases, you can take this a step further and even control your digital camera remotely: you can spy on the room where the camera is, taking snapshots on demand. (Some cameras that support this feature are the Canon PowerShot A60, A70, S400, S50, and G5; the HP Photosmart C618 and 912; the Kodak DC280, DC4800, and DC5000; and the Nikon D1, D1X, and D1H.)

To set this up, return to ImageCapture's Sharing preference pane on the camera the Mac is connected to. Activate the Share My Devices option and select the camera. On the receiving Mac, open Image Capture and choose Browse Shared Devices from the Devices menu. Click the disclosure triangle, select the camera, and click OK. If your camera is one of the compatible models, the Remote Monitor tab will spring to life, offering buttons for controlling the camera – Delete, Take Picture, and so on.

If you click on the Remote Monitor tab, you see, at full size, whatever the camera is seeing; the image is updated every minute. (The pictures are blasted to you via the Internet but aren't captured on the camera's memory card.) Click the light-switch icon to change the shutter interval.

David Pogue

The lowdown on fonts

If you can't remember where you got a font, or if you're wondering where you might find others like it, Font Book's font-information box may have the data you need.

Font Book, Panther's font-management utility, offers a wealth of useful information about the fonts in your collection. Launch it and click a font in the Fonts column. Just below the preview box, you'll see a grey dot; double-click it to reveal a font-information box showing the font's type, its foundry, its family, and additional details. If any of the data is truncated, you can reveal the full content by hovering the cursor over the truncated words. In many cases, hovering over the Copyright line will reveal detailed copyright information (see "Copyright overload").

Rob Griffiths

Use iPhoto albums as screen-savers

In Panther, it's easier than ever to use your favourite photos as a rotating screen saver. Just open the Desktop & Screen

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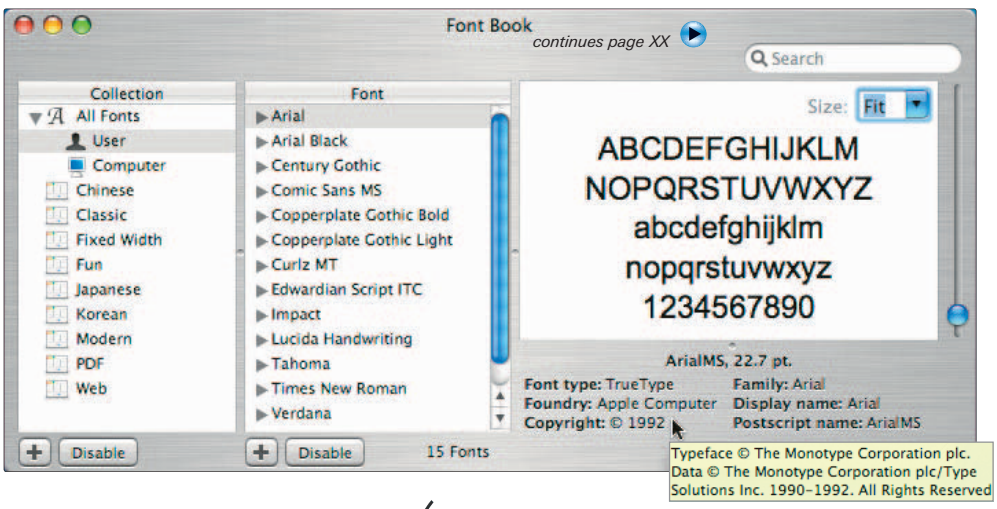
TIP! Recent convert?

If you recently made your way to Panther from a Windows computer, you may be wondering where all your familiar controls are. Not to worry. If you know what it's called in Windows-speak, you can use Panther's useful Windows To Mac glossary to find it on your Mac. Press ⌘-? (question mark) to open Mac Help, and type Glossary in the search field. You'll see a list of Windows features and panels along with their Mac counterparts.

Kelly Lunsford

Copyright overload

If the included copyright blurb in Font Book isn't enough for you, just hover the mouse nearby; you'll soon see the entire copyright notice displayed in a floating box.



TIP! Use Colorsync to shrink PDF sizes

One often-overlooked Panther feature is the new ColorSync Utility (in Applications: Utilities). Even if you aren't a print professional, you can use this program to refine PDF files that you work with on a regular basis, such as image-heavy user manuals, to make them leaner, faster, and more manageable – all without spending a dime on Adobe Acrobat.

Launch ColorSync Utility and open an image-heavy PDF file (File: Open). In the Filters section of the dialog box that appears, click New. Double-click the newly created Untitled filter and rename it Compressed. Click on the Details button, and set the Color pull-down menu to Images (see "PDF diet").

Set the second pull-down menu to Compression, and the third to JPEG. Choose a Quality setting – for the smallest possible file, choose Least – and then click on the Apply button (located below the Filters section). Go to File: Save As and save your PDF under a new name. To see what you've done, return to the Finder and check out the new PDF's file size – it should be significantly smaller than the original's. In our tests, we shrank a 57MB file to 4MB via this process.

There's much more you can do with ColorSync Utility, such as converting colour images to black-&-white, and increasing or decreasing lightness.

Rob Griffiths

PDF diet

Panther's new ColorSync Utility is for more than just previewing profiles. You can also use it to slim down overweight PDF files.

Saver preference pane, click the Screen Saver tab, and scroll down to the bottom of the Screen Savers list. You'll see all your iPhoto albums – including iPhoto 4's Smart Albums. Select an album, set your timing preference, and then sit back and watch the show.

If you want to see pictures of your pet without waiting around for your screen saver to kick in, you can also use your iPhoto albums as a rotating desktop picture. Open the Desktop tab of the Desktop & Screen Saver preference pane, select the appropriate iPhoto album, click the Change Picture option, and then choose a rotation frequency from the pull-down menu. Your desktop background will now change, using the photos in the selected album.

Dan Frakes

Consolidate Software Updates

Software Update is a great way to make sure that you have the latest bug fixes and feature updates for OS X and Apple-provided software. But if you have several computers running Panther, there's really no point in downloading the same software updates – which can be very hefty files – on every Panther machine you have. Instead, use Software Update to save updates, so you can transfer the files to another Mac or archive them to CD in case you need to reinstall OS X later.

When you run Software Update (from System Preferences), click on an update and select Install And Keep Package from the Update menu. Software Update will download and install the update, and it will save a copy of the installer package for later use (in Library: Packages).

Dan Frakes

Label your contacts

To print a simple sheet of mailing labels in earlier versions of OS X, you first had to export all the data from Address Book into a separate application that supported vCard data. Panther greatly simplifies this process by letting you print labels directly from Address Book.

Open Address Book, select the contacts you want to print onto mailing labels, and then select Print from the File menu. From the Style pull-down menu, select Mailing Labels. Then click the Layout tab and choose the type and style of labels you're using (Avery Standard 5161, for instance). To format your labels, click the Label tab and specify which address entries to print; then select the sort order, and the font and colour of the output. You can even drag an image into the Image box to place a picture on each label – perfect for holiday mailing labels (see "Easy labels").

When you click Print, Address Book is smart enough to print labels only for those entries that have an address – preventing you from wasting labels for email–only entries in your database.

Rob Griffiths

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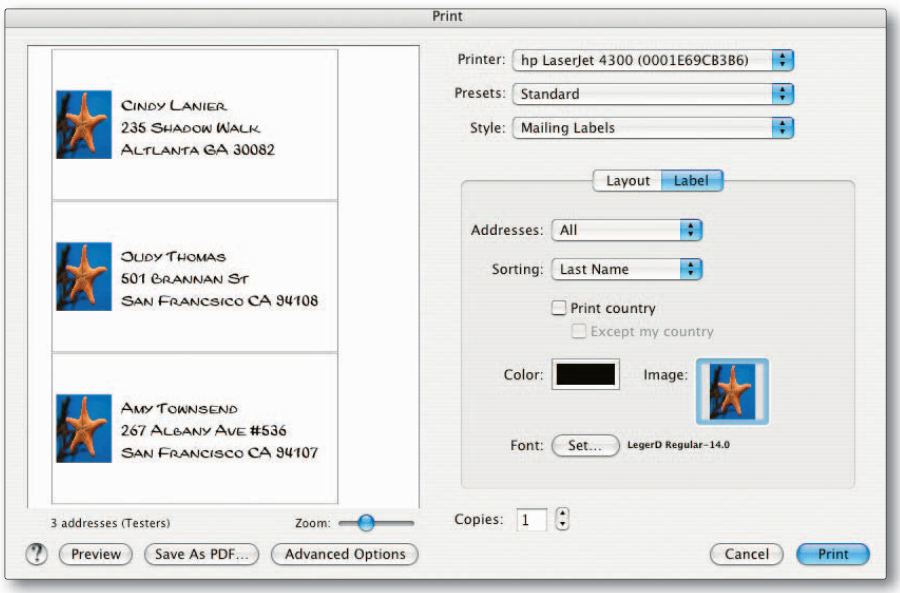
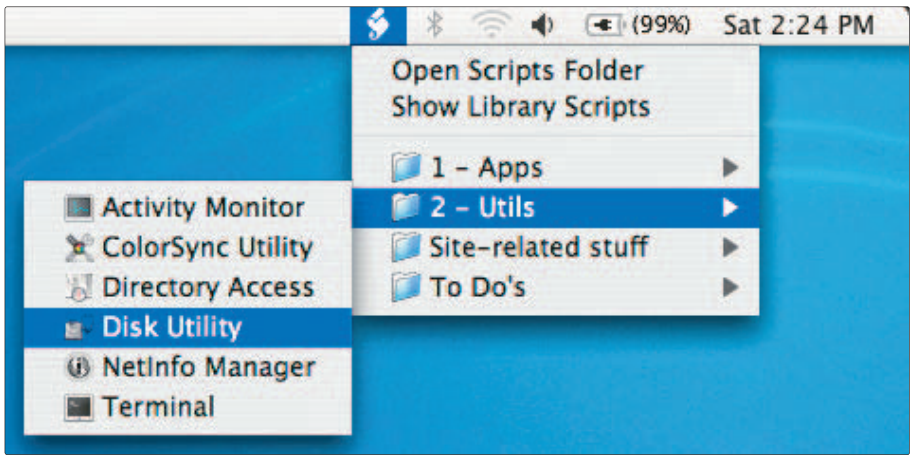


Easy labels

Thanks to Panther you can now format and print address labels from within Address Book.

Die another day:
12 ways to restore lost features



Freebie Apple menu
Using the Apple-provided Script menu, you can create a replacement for OS 9's Apple menu.

In addition to bringing some great new features to the Mac, OS X 10.3 (like previous upgrades to OS X) removes a few features that some Mac users rely on. Here's how to reactivate (or in some cases, rebuild) a few of Panther's obvious omissions.

Return Favorites to the sidebar

In earlier versions of OS X, the Favorites folder – located in the Finder's toolbar – offered quick access to important files, folders, and servers. If you've mourned its loss in OS X 10.3, you'll be pleased to learn that it isn't gone forever. To bring Favorites (and its heart icon) back to Panther's Finder windows and to Open and Save dialog boxes, simply open the Library folder in your user folder, and drag the Favorites folder into the Finder's sidebar.

To add aliases of new items to the Favorites folder, select the items in the Finder and press ⌘-Shift-T. You now can use your Favorites folder as a repository for dozens of files and folders without cluttering up the sidebar.

Christopher Breen

Create your own Apple menu

Do you still miss OS 9's Apple menu, which let you access favourite applications, documents, and folders from the menu bar? You could shell out a few bucks for a third-party replacement – but why bother, when you can use OS X's Script menu to build your own?

Open the AppleScript folder in Applications and double-click on Install Script Menu. A small script icon should appear in the menu bar. You'll end up hiding the Script menu's default scripts in the course of this tip, but you can access them at any time from the Library: Scripts folder at the root level.

By default, the Script menu reflects the contents of the systemwide Library: Scripts folder. However, you can also tell it to look inside the Scripts folder located in your user's Library folder. If you don't have this folder, create one – you must name it Scripts for this trick to work.

To begin building your new Apple menu, select a favoured application from your Applications folder and ⌘-Option-drag it into the Library: Scripts folder in your user folder. This creates an alias of the original application. Now click on the script icon in the menu bar; you should see your aliased application at the end of the list. Select it to launch the application.

Repeat this process for any other applications, documents, and folders. Adding folders to the Script menu is especially cool since you can create subfolders within these folders to better organize contents – to keep your utilities separate from your applications, for example. But the Script menu's power isn't unlimited – you may run into trouble if you try to add an alias that contains hundreds of items. For best results, reserve the Script menu for items you use very often.

The last thing you need to do is remove all the Apple-provided scripts from the menu – leaving only the aliases you've added to the menu (see "Freebie Apple menu"). To do this, click on the Script-menu icon and select Hide Library Scripts from the pull-down menu.

Rob Griffiths

Browse AppleTalk servers

If you use AppleTalk servers, you may be wondering why they seem to have disappeared in OS X 10.3. In fact, they're still there. But Apple has disabled AppleTalk server browsing by default.

To enable AppleTalk browsing, launch the Directory Access utility (Applications: Utilities), click on the lock icon at the bottom of the window, and then enter your administrator password when prompted. Activate the AppleTalk option and click on Apply. When you quit Directory Access, you should be able to browse your network's AppleTalk servers.

Rob Griffiths

Add new Calculator modes

Do you miss OS 9's Graphing Calculator? Well, you can bring it back to life in OS X 10.3 – along with an expression input sheet and a hexadecimal calculator.

First, open the Applications folder and create a duplicate of the Calculator application (a backup in case something goes wrong). Ctrl-click on the duplicate and select Show Package Contents from the menu. In the resulting Finder window, select the column-view mode (View: As Columns), and then go to Contents: Resources. From the Resources folder, drag the Graphing-2D.calcview, ExpressionSheet.calcview, and Hexadecimal.calcview

Macworld.co.uk Search Macworld's Reviews database online (www.macworld.co.uk), updated throughout the month

Give new life to unsupported hardware

Does your favourite peripheral not work in Panther? Or worse, does your Mac not even let you install the new OS? Not content to let their hardware go the way of the dodo, a few developers have tried to solve these support issues and breathe new life into older computers and devices. Of course, as with any fix for officially unsupported hardware, you use these utilities at your own risk. Although many Mac users have had success with these workarounds, there's always a chance of problems – most notably, system instability.

Install Panther on older Macs

If you want to install OS X 10.3 on a Mac that isn't officially supported, Ryan Rempel's XPostFacto may be able to help (**http://eshop.macsales.com/osxCenter/XPostFacto**). This open-source program currently supports a range of older Macs – including the 7300, 7500, 7600, 8500, 8600, 9500, 9600 (as well as clones based on those models), beige G3s, WallStreet PowerBooks, and a few others. Support for additional models is in development. Note that some Mac models have limitations when running Panther; see the XPostFacto documentation for details and troubleshooting advice.

Revive defunct USB devices

Although most USB input devices will work in Panther, you won't have full access to programmable buttons and other features without a specific driver. If your favourite USB input device – whether it's a mouse, a joystick, a game pad, or a trackball – doesn't offer drivers that work with Panther, check out Alessandro Montalcini's USB Overdrive ($20; **www.usboverdrive.com**). It supports almost all USB input devices, and it lets you assign clicks and keyboard commands to each button.

Save your scanner

Many scanner manufacturers have been slow to provide Panther-compatible drivers for their scanners (or drivers compatible with any version of Mac OS X, for that matter). Thankfully, a couple of developers have come to the rescue.

VueScan, by Hamrick Software ($60; **www.hamrick.com**), supports almost any flatbed or film scanner and includes advanced controls for refining scans. You can download a free trial version of the software before you buy.

Another option is Mattias Ellert's TWAIN SANE (**www.ellert.se/twain-sane/**), a free OS X implementation of the open-source SANE universal scanner interface. Although its controls aren't as polished as VueScan's, it may be a good option for casual scanner-users who don't need advanced controls.

New hope for video cards

If you've seen Apple's promotional material for OS X, you know about Quartz Extreme – the graphics technology behind OS X's eye candy. Quartz Extreme, however, is officially supported only by AGP video cards with 16MB or more of VRAM. If your Mac has a PCI card or an AGP video card with too little VRAM, check out Dangerous Wares' PCI Extreme (**http://pages.cthome.net/zacks/**). This freeware enables Quartz Extreme on a number of ATI cards that wouldn't ordinarily support it.

Dan Frakes

folders into the PlugIns folder in the previous column.

Launch the duplicate Calculator application. You should see three new options listed under the View menu: Expression Sheet, Graphing, and Hexadecimal.

Rob Griffiths

Set default email and Web programs

In previous versions of OS X, you could change your default email and Web programs in the Internet preference pane. But you won't find these options in Panther's System Preferences.

To set your preferred email program in OS X 10.3, you now have to launch Apple's Mail program. In Mail, select Preferences from the Mail menu, click General, and then select an application from the Default Email Reader pull-down menu. Similarly, to set your preferred Web browser, launch Safari and change the Default Web Browser setting in the program's General preference pane.

Rob Griffiths

Access hidden Internet settings

You may also want to set default applications for other types of Internet data, such as FTP transfers, newsgroups, compressed files, and so on. In OS X, these settings are stored in a single preference file – but Panther doesn't give you access to them.

You can work around this problem with the help of More Internet, a free preference-pane utility from Monkeyfood.com. After installing More Internet, simply open its preference pane in System Preferences, choose the desired protocol (ftp, news, zip, and so on), and then drag your preferred default application for that protocol to the More Internet window.

More Internet even lets you change the default email program and Web browser without having to launch Mail and Safari.

Dan Frakes

View missing Software Updates

If you upgraded to Panther from another version of OS X, Software Update may not correctly display all your installed software upgrades – making it hard to figure out which ones you need.

To fix the problem, open the root Library folder, go to Logs, and make a duplicate of Software Update.log – for backup. To edit the log file, ⌘-click Software Update.log, choose Open With: Other, and navigate to TextEdit or a similar text editor. Delete entries that predate your upgrade to OS X 10.3 (Panther was officially released on October 24, 2003).

Save and quit the text editor. When you open the Software Update pane and click on Installed Updates, you should see a list of installed Panther updates.

Rob Griffiths **MW**

Fix secondary video cards

Several Mac users have reported that Panther disables older video cards that were driving second monitors. Here's a possible workaround:

Assuming that you can boot into Panther on the main display, launch Terminal (in Applications: Utilities) and type:

```
sudo nvram boot-args="romndrv=1"
```

Reboot your machine. If all goes well, your second video card should be working again. But while this has worked for many people, there are scattered reports of machines that refuse to boot after this change is made. If that happens, you'll need to do a parameter RAM reset.

Press ⌘-Option-P-R while restarting your Mac, and keep the keys held down until you hear three chimes. When you release the keys, your Mac should boot successfully.

Rob Griffiths

Original cine

Six digital camcorders that won't break the bank. By Ben Frain

When looking at new DV cameras the emphasis nowadays should perhaps be less on image quality (although that's still important) and more upon deciding which facilities are essential to the intended or likely application. Furthermore, consideration should be given to how easy it is to get the camera to do the things it's actually capable of.

Even the very cheapest DV cameras tested here offer excellent images for their asking price. It's important not to get hung up on numbers and specifications when practicalities are more important. It's equally important to consider what practical features will prove useful in the day-to-day life of the camera. What follows are a few important areas of consideration when choosing a low end DV camera.

Single vs multiple CCDs

A CCD (Charge Coupled Device) has a major hand in taking the image coming through the lens and turning it into digital information on tape/drive. Much is documented on the importance of CCDs but for the sake of simplicity the following general rule applies; the bigger and more of them there are, the better the video image will be. In the digital domain, video information is made from three colours; red, green and blue. All three can be handled by a single CCD (in the case of a single-CCD camera) or by using a CCD for each colour (in the case of a three-CCD camera). However, for consumer cameras there's a slight rub. A single CCD camera with a large CCD will be able to take higher-resolution digital

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JVC GRD23EK

Manufacturer: JVC
Web: www.jvc.co.uk
Tel: 0870 330 5000
Pros: 16x zoom; decent menu system; low price.
Cons: Bottom-loading tape; on-camera charging, no DV-In.
Price: £399 including VAT.
★★★★/7.0

The cheapest of JVC's current DV camera range is a perfect example of just what good value DV cameras are nowadays. The single-CCD model is by no means perfect, but considering that these can be picked up on the Internet for under £300, it represents excellent value for money.

It's an easy camera to get to grips with thanks to an intuitive menu system. In its favour it also features a 16x optical zoom, 2.5-inch colour LCD (the viewfinder is also colour), and built it LED light.

The major gripes with this model are a lack of any tilt mechanism on the viewfinder (it comes out from the camera body but cannot be tilted up or down), the on-camera battery charging, a bottom-loading tape mechanism, and no memory card facility.

The lack of memory card is understandable given the price point, and the camera addresses the issue by including a stills button that creates a still image to tape for easy export. Sadly the GRD23EK also lacks any DV-In facility.

JVC GRD73EK

Manufacturer: JVC
Web: www.jvc.co.uk
Tel: 0870 330 5000
Pros: 16x zoom; DV-In/Out, low price.
Cons: Bottom-loading tape; on-camera charging; no viewfinder tilt.
Price: £499 including VAT.
★★★★/7.7

A step up from the GRD23EK is the GRD73EK. Although physically very similar to its lower priced brethren it also adds some significant features. Firstly it adds a DSC device (8MB MMC card supplied as standard) allowing stills and MPEG movie capability. Also on this model is DV-In, along with USB 2.0 for file transfer from the DSC device. All the positive and negative aspects of the GRD23EK remain in this model, but for the negligible price difference between the two it would be wise to stump up the extra cash for the GRD73EK.

While the DSC facility is far from revolutionary (the movie mode is only MPEG-1) unless users already have a separate DSC device it will prove invaluable for the odd snap. Ultimately, despite the niggles of tape loading and on-camera battery charging the GRD73EK represents excellent value for money. A wise choice for the occasional camcorder user.

stills than a multiple-CCD camera with smaller-size CCDs. Therefore, more often than not, even more expensive DV cameras deploy a larger single CCD rather than three smaller separate units (which typically provide better video images) to provide more impressive digital stills capability.

Optical zoom

Many cameras boast enormous zooms: 40x, 300x and even 700x claims are not uncommon. However, it's important to highlight the differences between an optical zoom and a digital zoom. An optical zoom uses the glass filaments of the lens (just as a telephoto lens would on a stills camera) to bring the subject optically closer to the recording device. The optical-zoom specification is the physical zoom limit of each particular camera. A digital zoom, however, is done through software.

When the limits of the optical zoom are reached, a digital zoom 'accentuates' the existing image. However, because the digital zoom isn't performed optically it actually looses visual information. The dimensions of a DV video frame are fixed at 720-x-576 pixels and a digital zoom is closing in on one area of that frame as it zooms, effectively making up the extra information needed (as the 'real' visual information is lost at either side of the zoom). This is why images at the far end of a digital zoom appear so distorted and blocky. There are few practical uses for digital zooms, and the visual effect they produce can be achieved easily with post-production software. It is therefore unwise to place any weight in a digital zoom specification when buying a DV camera.

Bottom-loading cameras

Many MiniDV cameras employ a bottom-loading tape mechanism. This simply means that tapes are loaded from the bottom of the camera rather than the side, top or rear. However, this design has one major problem: tripods. With a bottom-loading camera, each time a tape is loaded the camera has to be removed from the tripod to gain access to the tape compartment. Needless to say, if the camera is to be used for a lot of tripod mounted work, a bottom-loading camera is likely to become a major headache.

On-camera battery charging

There is a growing trend of manufacturers making their cameras charge their batteries 'on camera'. The negative implications of this are important to consider. Rather than having a separate charger, where batteries can be charging while the camera is in use, the battery can be charged only when attached to the camera. Therefore, unless a plethora of batteries have already been prepared, filming must stop each time a battery needs charging – a major practical disadvantage compared to off-camera charging.

Progressive scan

A camera with a progressive-scan mode is often preferable for users looking to use their video footage on the Web. Standard video is recorded interlaced, where two separate fields of odd and even lines are used to make one complete frame. Interlaced video displays fine on a television but produces visual artefacts (referred to as a comb effect as the edges of objects often appear like teeth on a comb rather than a straight line) on a computer monitor. There are two ways of eliminating this effect. First, the interlaced video can be de-interlaced with software (compression suites

Canon MVX10i

Manufacturer: Canon
Web: www.canon.co.uk
Tel: 01737 722 0000
Pros: 18x zoom; menu system; external VCR controls.
Cons: Bottom-loading tape; on-camera charging; no stills.
Price: £399 including VAT.
★★★★/7.5

The single CCD MV700 has a slim chassis design made possible by the bottom-loading tape mechanism. It has an 18x optical zoom, 2.5-inch colour LCD and tiltable colour viewfinder. The MV700 boasts impressive picture performance for its class and also enjoys an excellent menu system. It also features externally accessible VCR controls above the flip-out LCD for easy tape shuttling.

However, along with the aforementioned tape loading the MV700 also uses on-camera battery charging. As with the other models at this price, the only method of stills acquisition is by recording a progressive image to tape for future software extraction. Sadly, the MV700 also lacks any form of progressive scan mode. Ultimately, while easy to pick up and use and producing fine visuals, the MV700 also falls short of the Panasonic DS60 in terms of day-to-day practicality.

Panasonic DS60

Manufacturer: Panasonic
Web: www.panasonic.co.uk
Tel: 08705 357 357
Pros: Low price; decent build-quality; high performance
Cons: Awkward zoom; DV-Out only; no stills.
Price: £399 including VAT.
★★★★/8.0

Despite approaching the end of its production run, the DS60 won instant kudos for featuring off-camera battery charging. After investing in a second battery it would be possible to shoot throughout the day using this model without having to pause for hours at a time while the batteries were charged. The model has a black-&-white viewfinder and 2.5-inch colour LCD screen. It also has a side-loading tape mechanism, which means it's perfect for tripod-based work.

As expected, at this price, DV-In is absent from the DS60 along with any form of memory card. The menu system is also a little old-fashioned compared with the similarly priced JVC GRD23EK. Despite this, the DS60 is the more practical for most applications making it the better choice of the two. It also features a good progressive scan mode for users looking to shoot Web-bound footage. An excellent, easy-to-use budget camera.

Canon MV700

Manufacturer: Canon
Web: www.canon.co.uk
Tel: 01737 722 0000
Pros: Stills; tape mechanism; portability; DV-In/Out.
Cons: Crowded controls; on-camera charging; no focus ring.
Price: £1,099 including VAT.
★★★★/7.9

The MVX10i is an extremely compact design. This proves to be both a blessing and a curse. The camera is well featured. Its impressive digital-still facility allows images up to 1,632-x-1224-pixel images, and it can record MPEG-4 movies to SD multimedia card. Its built-in flash helps enormously in low-light environments (digital recording devices being notoriously poor performers in this respect). To round the memory card facilities off, it also features the Canon direct-print capability that allows printing to any PictBridge compatible printer.

All this capability does, however, bear a cost on the day-to-day usability of the camera. While the tape loads from the back and is completely unobtrusive, the abundance of small fiddly dials will hamper all but the most nimble fingered – the zoom being particularly tricky. As a jack-of-all-trades camera, our only major complaints are on-camera battery charging and the lack of a manual-focus ring.

such as Squeeze or Cleaner). Alternatively, a camera with a progressive mode (also known called pro-scan) can be used. Progressive scan records footage as complete frames rather than separate fields. Progressive scan mode also produces a slightly more slurry aesthetic and many feel its look more closely mimics celluloid.

Memory cards and the stills facility

Any DV camera can produce a still image by extracting a single frame from footage. However, as DV resolution is only 720-x-576 pixels, it isn't practical to use those images for prints. Thankfully, more DV cameras ship with some form of memory card and a stills function. A camcorder with a digital-still camera (DSC) facility usually produces stills far beyond the limits of DV's pixel limit, and one with a memory card behaves just like any DSC device when connected to a Mac. The size of images that DSC-capable camcorders can create is increasing and for some a camcorder with a memory card can negate the need for a digital-still unit.

DV-In/Out

Historically, DV-In/Out has always been a point of contention. In the UK, additional tax has always been applied to devices capable of DV-In. Therefore manufacturers aiming to hit low price points often disable the capability to reduce the price tag. A lack of DV-In poses a problem when owners wish to send edited footage back to their cameras from their desktop. Without it, the only viable option of getting footage onto the living room TV is to export it somehow to VHS, which causes degradation of visual quality and is a nuisance to set up. However, with the majority of computers now equipped with a DVD burner, this issue is perhaps less important. For users without DVD-burning capabilities, DV-In should still feature high on the must-have list.

Conclusion

The camera that scores highest in our group test, the Panasonic DS60, is relatively low on paper specifications. Despite the complete lack of any memory card facilities and a very basic menu system, the camera scores well because of excellent day-to-day practicality. It can be used on a tripod and spare batteries can be charged while the camera is in use. As a workhorse camera, the DS60 will prove an excellent purchase. Furthermore, if footage is Web-bound, the DS60 will soon earn its money thanks to the excellent Panasonic frame mode.

However, as more users are looking for stills capabilities, the other major recommendation is the Canon MVX10i. It's dearer than the other cameras here, but features impressive digital-still facilities (equivalent to a standalone 2-megapixel stills camera) and excellent optics. While it has more dials than the Nautilus, its performance is impressive across the range and it was by far the most fully featured camera on test. It also includes DV-In for those without DVD burners.

If a memory card, progressive scan mode and tripod are never going to be used, it's worth considering the cheaper JVC and Canon models as they are easy cameras to get along with. At the low end of the scale, there's little to separate the visual performance of each camera, making practicalities and cost the defining characteristics.

Ultimately, the important thing is to ignore the hype and identify the application the camera is likely to be used for. By doing this the best choice for each particular user is likely to reveal itself. **MW**

Sony PC105E

Manufacturer: Sony
Web: www.sony.co.uk
Tel: 020 7365 2947
Pros: 18x zoom; menu system; external VCR controls.
Cons: Bottom-loading tape; on-camera charging; no stills.
Price: £699 including VAT.
★★★/6.8

Sporting excellent build quality, the PC105E is the most solid-feeling camera of the group. It is also well featured with a digital-still facility and flash, MPEG movie recording to Memory Stick, DV-In/Out and a manual-focus ring.

It's also the only camera in the group to offer a touch-screen LCD. The touch-screen negates the need for a host of external physical buttons. The only downside of this feature is that the LCD is likely to get grubby with prolonged use.

Despite the inventive use of the touch screen, the PC105E loses points by employing both a bottom-loading tape mechanism and on-camera battery charging. Finally, like the JVC GRD23K, the Sony lacks any tilt capability on the viewfinder. This can be a problem when using the camera for extensive periods of time, as the camera must be held higher for longer.

Add to the vista

Create panoramas without expensive, specialist equipment. By Jim Heid

Back in the days of film photography, I'd capture wide vistas by shooting several overlapping photos. Then I'd line up my prints on the dining-room table and paste them together to create a crude panorama.

The digital world is a much better place. Now you can transfer your shots to your Mac and use special software to digitally stitch them together into a single, seamless image. When you're done, you can print your panorama on a photo printer or bring it into iPhoto and order prints.

These days, you can get great outdoor panoramas with nothing more than a handheld digital camera and the stitching features in Adobe Photoshop Elements (£92 including VAT; **www.adobe.co.uk**) or similar photo-editing software. However, to get the best results from these programs, you need to know how to set up your shots.

Shoot, turn, repeat

In a good digital panorama, the seams between overlapping photos should be invisible. Although Photoshop Elements' Photomerge feature does a fine job of blending multiple images, it can do only so much. It can't compensate for gaps in an image or vastly different angles or exposures. (For a primer on creating panoramas in Photoshop Elements, see "A stitch in time.") To get truly seamless panoramas, you need to shoot photos with stitching in mind.

Watch the overlap When shooting a panorama, keep roughly 20 to 40 per cent overlap between each consecutive image. Many digital cameras offer a panorama mode, which displays a small version of the last shot on the left side of the camera's LCD screen. This makes it easy to position the camera for the next.

If the camera lacks a panorama mode, you'll need to gauge the overlap manually. When taking each shot, locate a landmark or other reference point somewhere in the right half of the frame. Then carefully rotate the camera to make sure that same reference point also appears in the next image. Do your best to rotate the same distance between each shot.

Consistency counts Avoid significant variations in brightness from one image to the next. You don't need to worry about this if using your camera's panorama mode – the camera will lock the exposure and white-balance settings after the first shot to ensure consistent lighting for the remaining shots. However, if it camera lacks a panorama mode, you can maintain consistency by using one of its manual white-balance settings instead of automatic white balance, and by activating its exposure-lock feature. Refer to the manual if you're unsure how to do this.

On the level Of course, the most important step in getting a good panorama is simply to stay put. Changes in camera location, height, or level may make it difficult to match-up photos in the stitching process – creating unwanted distortion and noticeable seams.

Ideally, try to rotate the camera over the optical centre of its lens. If shooting outdoor panoramas of distant scenes, a tripod can help keep things level. But don't worry if you don't have one – I held my Canon S-50 in my hand when taking the example panorama. When holding the camera, firmly plant your feet, lock

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Now on the iDVD menu

Tired of iDVD's canned menu themes? To spice up your menus with professional flair, check out the assortment of themes available online. For example, iDVD ThemePak (**www.idvdthemepak.com**) currently offers six CDs of themes at prices ranging from $29 to $49. Each set contains eight designs – some with animated backgrounds and drop zones. The company also offers several free themes (one is shown here).

Another option is iDVDThemes, which offers standard themes and a collection of whimsical holiday themes, including a snowman with animated snow ($13; **www.idvdthemes.com**). If you don't want an entire collection, check out iDVD Themetastic, which sells individual themes ranging from soccer to a casino, each for less than $10 (**www.idvd-themetastic.com**).

Pictures that awe
A single photo can show only a slice of life. To capture the bigger picture, use Photoshop Elements or similar photo-editing software to stitch separate photos together into a breathtaking panorama.

your elbows as close to your body as possible for extra support, and then slowly rotate your body from the waist to keep a tight arc. And whatever you do, don't adjust the zoom between shots. Remember, consistency is key.

Camera positioning is even more critical for indoor panoramas and for outdoor scenes containing nearby objects. In these cases, even a tripod may not give you the correct rotation. Because a camera's tripod-mounting hole is typically offset, the camera doesn't rotate over the centre of the lens. As a result, the panorama will probably have visible flaws – the edges of a doorway might appear twice, for example.

You can often fix these problems with a little work in Photoshop.

Printing panoramas

Once you've stitched together individual shots in Photoshop Elements or another stitching program, you should end up with a single panoramic image – a very wide panoramic image. At full size, my panorama measures roughly 11 inches tall by 36 inches wide – and it's composed of only four images.

Although you can print a panorama on any standard photo printer, a letter-size sheet of paper simply doesn't do your image justice. It reduces your beautiful mountain range or desert vista to a narrow strip only a few inches high. But there are plenty of better ways to commit a panorama to paper.

Roll 'em Many photo printers can accept roll-fed paper, which can produce dramatic, banner-size panoramas. If your printer is among them, choose the Landscape option in the Page Setup dialog box. Under Paper Size, choose the option that corresponds to roll-fed or panorama paper.

If printing from Photoshop Elements, go to Print Preview and click the Scale To Fit Media option. If printing from iPhoto, click the Print icon and choose Full Page from the Style menu.

Keep in mind that printing panoramas isn't cheap. A 30-foot roll of Epson's photo paper costs about £115 including VAT – and nothing drains pricey ink cartridges faster than photos two feet wide. Installing and working with roll-fed photo paper is cumbersome, too; I tend to waste a foot or two of paper for each panorama I print.

Ordering prints For results superior to anything you'll get from an ordinary photo printer, order photographic prints through iPhoto. However, you can take advantage of the panorama's narrow orientation by placing two on one print.

In Photoshop Elements, create a file slightly more than twice as tall as your panorama, and then drag two panoramas into the new file. Save the file in JPEG format with a compression setting of 12. (This minimizes JPEG compression.) Next, drag the combined JPEG into iPhoto and order your print. When it arrives, carefully cut the two panoramas apart.

For more tips on creating panoramas, or for information about putting panoramas online as interactive QuickTime VR movies, go to **www.macilife.com/digitalhub**. MW

A stitch in time

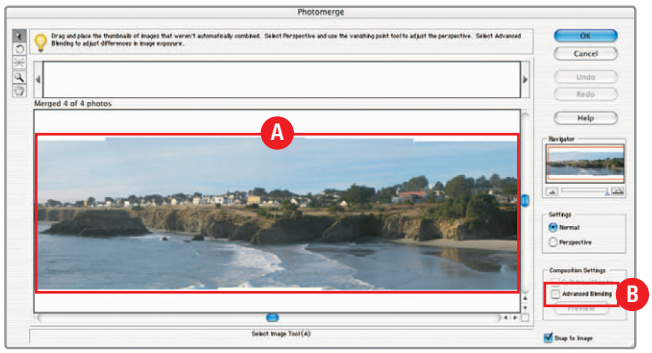
Photoshop Elements isn't the only software than can stitch together panoramic images, but it's one of the easiest to use. Its Photomerge feature (now also included in Photoshop CS) makes short work of seamlessly blending multiple photos.

Step 1: Open your shots

In Photoshop Elements, choose Create Photomerge from the File menu. (In Photoshop CS you'll find this feature under File: Automate: Photomerge). From the Photomerge dialog box, open all of the images in your panorama.

Step 2: Refine your stitch

Photomerge will attempt to position the overlapped shots and then blend them (A). You can fine-tune overlaps by hand if necessary. If you find the blends a little choppy, try turning on the Advanced Blending option under Composition Settings (B).



Step 3: Crop and polish

If you held your camera while shooting, your panorama will probably have ragged edges. To fix this, select the Crop tool, click the Front Image button in the control bar, and then drag to define the area to crop. Press return to confirm the crop.

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Haute curvature

Don't overlook – or misuse – Photoshop's curves. By Ben Willmore

Most photos in professional brochures and magazines have been enhanced or corrected until they're as flawless and polished as Hollywood celebrities. And Adobe Photoshop CS (£605 including VAT; **www.adobe.co.uk**) is usually the surgical instrument of choice. Photoshop has many ways to adjust images, but the Curves command is the most powerful and versatile when you need to darken or lighten a photo and highlight or obscure detail.

With that power comes daunting complexity, however, so many people turn to cookie-cutter tips like "click in the middle and push up the curve" and "make an S curve." But generic techniques don't work on images with unique challenges.

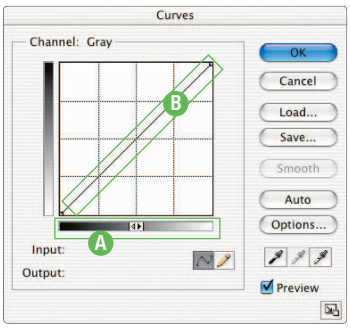
I'll show you how I've used curves on real-world images, and explain how you can apply those methods to your images. Once you understand the Curves command, you'll be able to finesse even the most problematic photo.

1 Get your bearings

Before you tackle tricky images, choose the adjustment mode that's best for you.

Photoshop represents an image's brightness levels in two ways: as light or as ink. These are called adjustment modes. Most photographers are more comfortable working with light, and most print-based designers are more comfortable working with ink. You can choose either mode regardless of whether you reproduce the final image on screen or in print.

Open a greyscale photograph and choose Image: Adjustments: Curves (or type ⌘-M) to access the Curves dialog box.



The horizontal bar at the bottom of the dialog box contains all the shades of grey you can have in a normal, 8-bit greyscale image. Because you opened an image in greyscale mode, the white is on the left side of the horizontal bar. This indicates that you're in ink mode – Photoshop will adjust your image as if you were changing the amount of black ink needed to print the image on white paper. Click on the double-arrow icon in the middle of that bar to switch the white to the right (A). Now you're in light mode. I'm going to use the light mode throughout this article, but you're welcome to use the ink mode – just move the curve in the opposite direction from what I say.

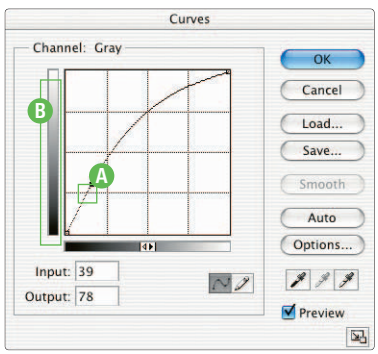
Above the horizontal bar is a grid with a diagonal line known as a curve, even though it begins as a straight line (B).

Compare the curve to the shades of grey in the horizontal bar. The curve begins at the bottom of the graph area, above black, because a monitor doesn't need any light to display black. The curve rises above the lighter shades of grey because a monitor uses more light to display lighter shades.

2 Adjust brightness levels

You can alter the curve to increase or decrease the amount of light used to display an image.

To adjust your image, click anywhere on the curve to add a dot, called a control point (A), and drag it up or down. When you move the curve up, you brighten the image by adding more light. Moving the curve down will darken the image by reducing the amount of light.



As you move the control point, keep an eye on the vertical bar on the left of the Curves dialog box (B). It shows the shades of grey you'll get if you move the curve to a particular height.

You can use as many as 16 points when adjusting the curve. To remove a control point, ⌘-click on it or drag it off the grid area.

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3 Target your efforts

To adjust your images with precision, let Photoshop add the control point for you.

To focus adjustments on a particular area of an image, you can find the brightness range of that area in the horizontal bar, and then adjust the part of the curve that appears directly above that part of the bar.

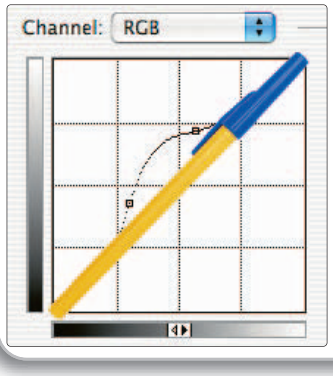
To target an exact location in an image, click on it. A circle will appear on the part of the curve that affects the brightness level of the location you're clicking on. Next, ⌘-click the same location in your image to change the circle to a control point. Use the up- and down-arrow keys to move the point up or down.

Note that you can't add control points this way when you're in CMYK mode.

For other ways to be precise in the Curves dialog box, see "Match brightness," below.

4 Keep an eye on the big picture

To estimate how a curve might affect an image, compare the curve you've created to the original diagonal line.



Any part of a curve that doesn't line up with the original diagonal line represents a change to your image. Hold a pen up to your screen to represent the original line, and look at where the curve deviates from it. Any part of the curve that is above the pen indicates an increase in brightness; any area below the pen indicates a decrease in brightness.

5 Fix an overexposed photo

You can combine and refine the basics to adjust an overexposed image.

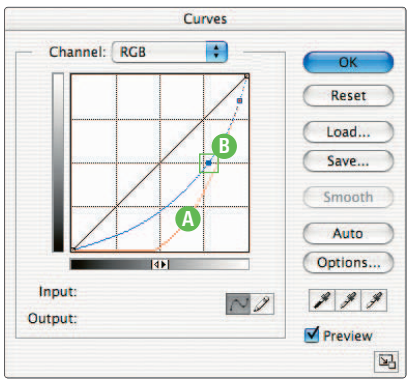
In this image (see "Before"), the hands should be the central focus; the clothing is an accent that shouldn't distract from them. To accomplish that, I darkened the washed-out hands and made the clothing recede without losing all of its detail.

I ⌘-clicked on the brightest area of the hands to add a control point to the curve. To darken that area, I used the down-arrow key to move the curve (press the shift key and an arrow key to move in larger increments) until the hands looked right. The red line is the result (A).

But large areas of the clothing became solid black (see "Middle") because a big part of the curve bottomed out. I added a second control point by clicking within that part of the curve and moved it up to brighten the darkest areas (B).

You can see that the final curve, shown in blue, doesn't have any abrupt changes of direction. To get smooth transitions in your image, your curve should be smooth.

The final image is more balanced (see "After").



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Match Brightness

You can use the numbers at the bottom of the Curves dialog box to make exact adjustments. Let's say a photo contains two objects that you want to match in brightness. With the Curves dialog box open, click on one of the objects, and the numbers at the bottom of the dialog box will calculate how much light is used in that area. ⌘-click on that area to add a control point for the object. ⌘-click on the second object to add a control point and see the light numbers for it. To match the two objects' brightness, just enter the brightness number from the first object into the Output field for the second object.

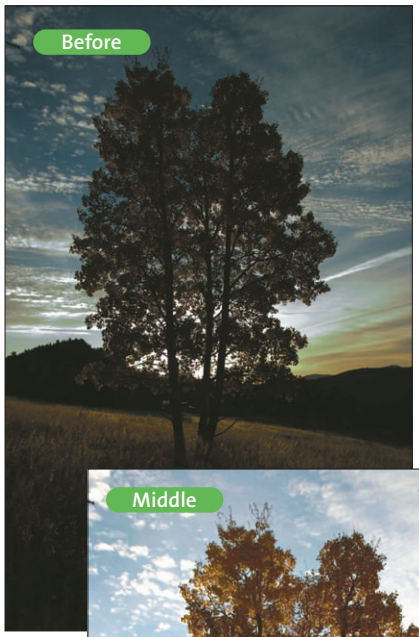
6 Fix an underexposed photo

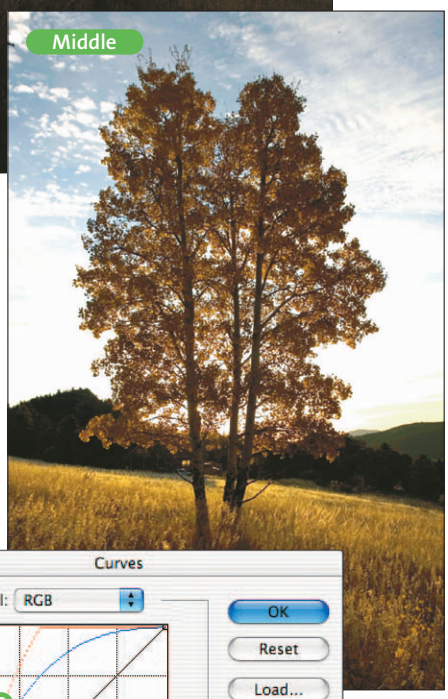
You can also use the Curves command to improve images that are too dark.

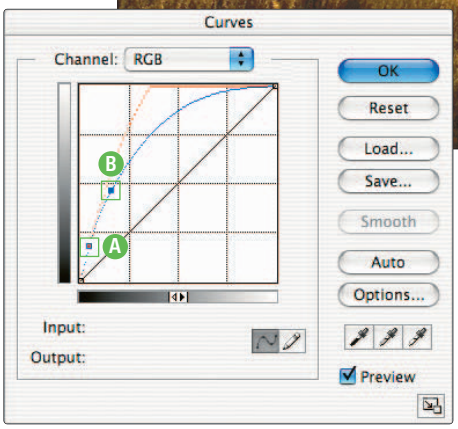
This photo of a tree has potential, but much of it is lost in darkness. To restore the image, I ⌘-clicked in the dark area below the tree (see "Before").

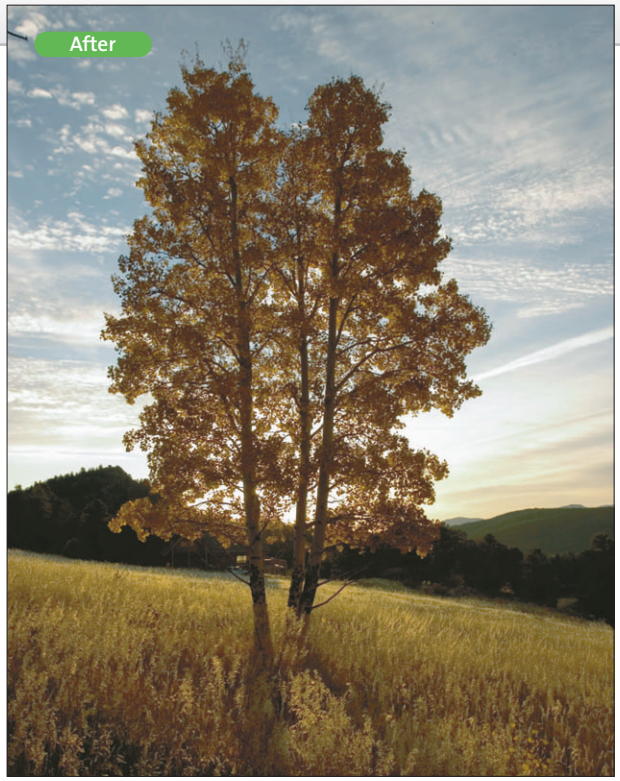
That produced a control point near the left part of the curve. To brighten the image, I pressed Shift-up arrow a few times until the area brightened; then I let go of the Shift key and used the arrow keys again to fine-tune the adjustment (A).

The field and tree looked good, but the sky was too bright (see "Middle"). To compensate, I ⌘-clicked within the sky to add a second control point and moved the curve down (B) until the sky darkened. It took only a few seconds to dramatically improve the image (see "After").







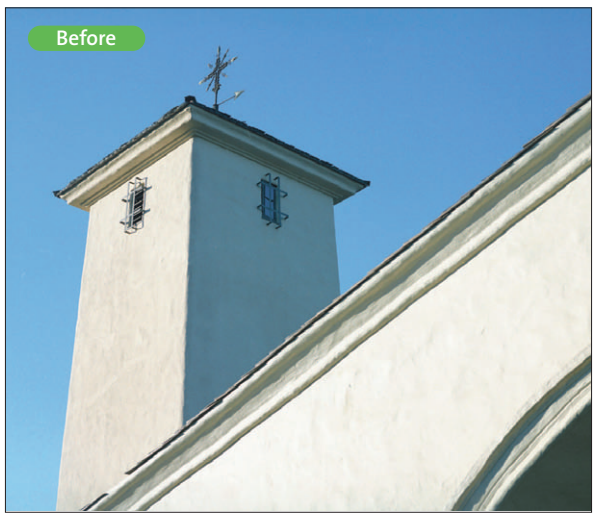


7 Exaggerate detail by increasing contrast

You can reveal detail hidden in an image by increasing a curve's angle, which adds contrast.

With a simple curve adjustment, you can transform flat-looking images into images that pop. Making a curve steeper exaggerates the differences between the brightest and darkest shades in an area of an image, thereby enhancing detail in that area.

In this image, you can't see much detail in the stucco building (see "Before"). I clicked and dragged across the main stucco area to see which part of the curve I should move. To make that part of the curve steeper, I added a control point and moved it down (A). But once I got the detail I wanted, one face of the tower turned solid black (see "Middle"). So I ⌘-clicked on the black face of the tower to add a control point in the appropriate part of the curve, and I used the up-arrow key to move that point up (B).



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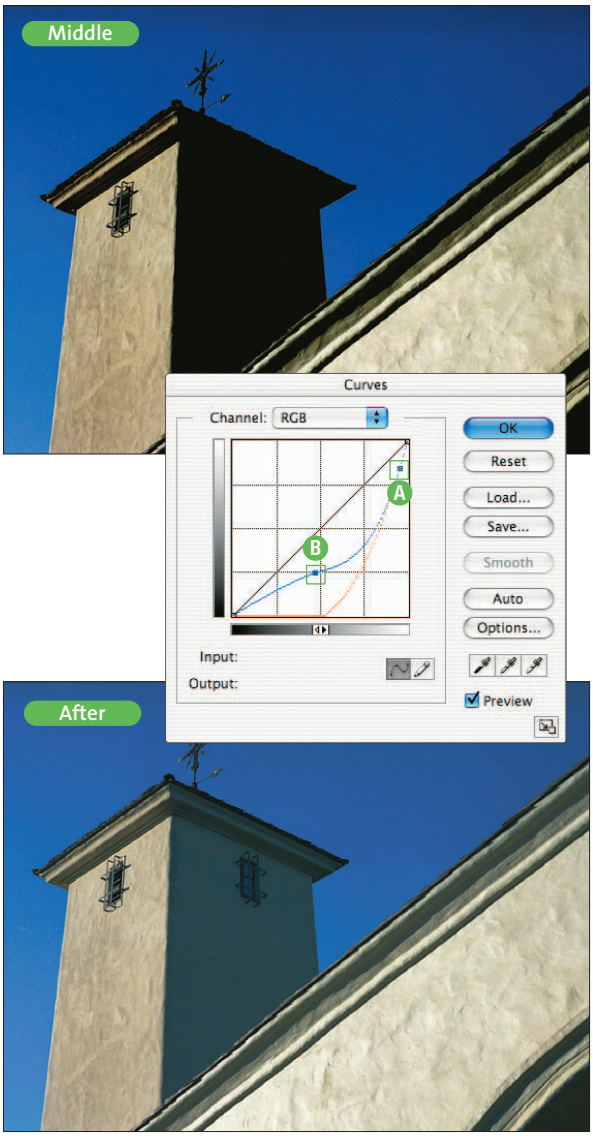
Because my curve ended up below the original diagonal line, Photoshop created the image with less light than before, and the entire image became darker (see "After").

For more about preserving your image when lowering curves below the original diagonal line, see "Stop colour shifts," below.



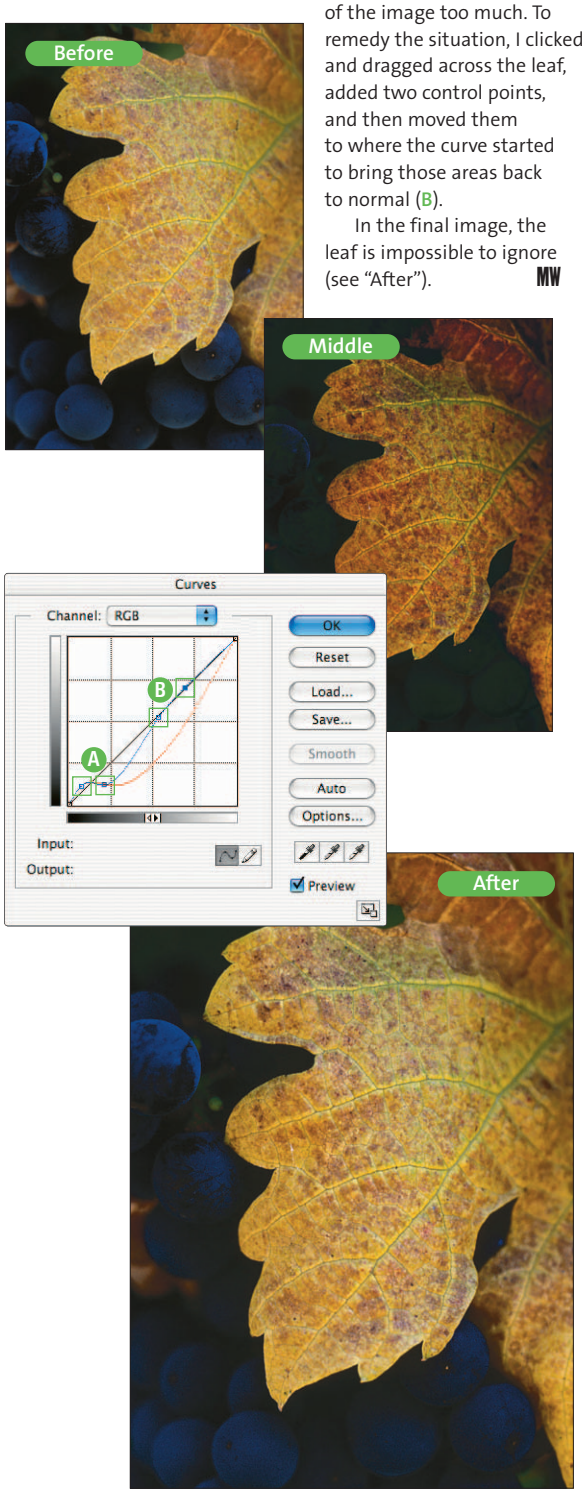
8 Hide detail by lowering contrast

To mask detail in part of an image, reduce the contrast in that area by flattening the curve.

When you flatten a curve, the different shades in your image become more similar, and detail can disappear. That isn't always a bad thing. In this image (see "Before"), I wanted the leaf to pop off the page. For that to happen, I had to lower the contrast of the grapes in the background.

I started by clicking and dragging across the grapes to see which area of the curve would affect them. I added control points at each end of the range that the circle travelled across. Then I flattened the curve across that area by moving one control point up and the other one down until they were at the same height (A). That made it nearly impossible to see the grapes (see "Middle"). It also darkened the rest of the image too much. To remedy the situation, I clicked and dragged across the leaf, added two control points, and then moved them to where the curve started to bring those areas back to normal (B).

In the final image, the leaf is impossible to ignore (see "After"). **MW**



Stop colour shifts

When you move a curve down to darken your image, the colours often become much more vivid. If the curve changes are significant, the colours may also shift in unexpected and unwelcome ways. You can prevent general colour shifts (as well as saturation changes) immediately after changing a curve: choose Edit: Fade Curves, and set the Mode pop-up menu to Luminosity.

The Fade Curves command works only on changes you apply directly to an image, so it won't be available if you use an adjustment layer. In that case, change the blending-mode menu at the top of the Layers palette from Normal to Luminosity. If you'd rather use Luminosity from the beginning, hold down the Option key when choosing Curves from the adjustment-layer pop-up menu at the bottom of the Layers palette. That will cause Photoshop to ask you for a layer name and blending mode before the Curves dialog box opens.

Code of conduct

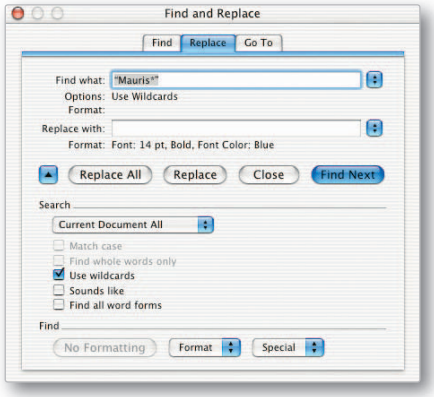
Beef-up Word's find-&-replace with coding. By David Blatner

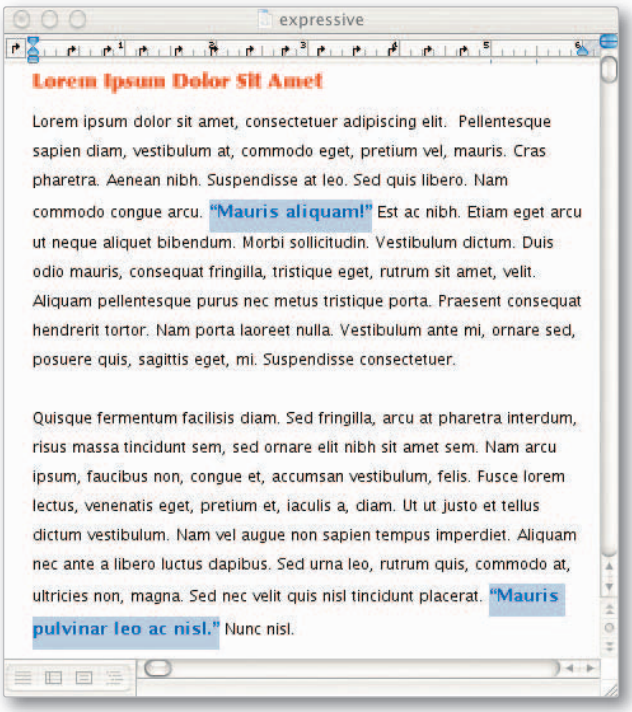
I love getting maximum efficiency from my Mac, so I love features that let me do a lot with a minimum of effort – features like the Find And Replace dialog box in Microsoft Word X. Many programs have a similar find-&-change tool, but Word's offers hidden features that can supercharge productivity if you learn a few special codes. These codes let you search and replace text in ways you may never have thought possible.

Word's codes are based on regular expressions, which let you use wild cards to describe patterns in text, such as "any uppercase letter followed by any numeral." Regular expressions are lifesavers when you need to find a word that could be spelled two different ways, or to apply special formatting to anything that looks like a product code or a telephone number.

Word doesn't support as many regular expressions as Bare Bones Software's £109 (excluding VAT) BBEdit (**www.cancomuk.com**) and $49 TextWrangler (buy online from **www.barebones.com**), and computer languages such as Perl, do. But it has one important advantage: most of the text I work with is already in a Word document.

Here's how you can use a few of Word's wild-card codes to perform cool find-change actions. (For a helpful code guide, see "Find it fast.") To make any of these work, choose Edit: Replace, click on the downward-pointing triangle in the Find And Replace dialog box, and select the Use Wildcards option.

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Change for the better
In the example above, we used wild cards to search for every quotation that included the word Mauris. Then we used the Replace tab of the Find And Replace dialog box to reformat the typeface and the colour of the quotations.

Take the first steps

The best place to start is with Word's über-wild card – the asterisk (*), which finds any amount of text. For instance, if you type c*r in the Find What field, Word finds car, carburetor, and can't make par.

Let's say you remember that there's an epic quote about boats in your 300-page document, but you're not sure exactly what it said. Instead of finding every instance of the word boat and hunting through the results, you can narrow your search by typing "*boat*" in the Find field. Word will find only strings of text that start with a quotation mark, include the word boat somewhere, and end with a quotation mark. If your document uses smart quotes (typographic quotation marks), specify them here by using these keystrokes: option-[(open square bracket) and option-shift-[.

To test your regular expression, switch to the Find tab of the Find And Replace dialog box, turn on the Highlight All Items Found In option, and then click on Find All. You should see at least one match in the document window behind the dialog box.

You can apply formatting to the text found this way. For instance, perhaps you want to change the font. Switch to the Replace tab, make sure the Replace With field is empty, and choose formatting from the Format pop-up menu at the bottom of the dialog box.

Find a word Regular expressions may seem scary because they look like mysterious codes strung together. However, if broken into pieces, they really aren't that complicated.

You already know that you can use Word's regular Find command to find every word that includes the letter q (such as aqua or quince),

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but what if you want to search your file for every word that begins with q (quince, Quark, and so on)? The regular expression for "find every word that begins with the letter q" looks like this: <[qQ][A-z]@>.

Here's a translation: The open angle bracket (<) means "beginning of word," so Word knows that the next character we ask for must be the first letter in a word. Square brackets indicate a range of characters, so [qQ] means "find either a q (lowercase) or a Q (uppercase).

Next, [A-z] means the second character of the word could be any uppercase or lowercase letter in the alphabet. (If you typed [a-z], Word would find only lowercase letters; if you typed [0-9], it would find only numerals.)

Because you don't know how long these words are, you have to use the @ symbol, which indicates that you want to "find one or more characters of the same type as the previous one." In this case, it means "find one or more uppercase or lowercase letters." Finally, the closing angle bracket tells the program that the last character is at the end of the word.

Once you've found the words that begin with q, here's how to do something with them: for example, put them in quotation marks. In the Replace With field, type "^&". The ^& means "insert whatever text the program finds" – in this case, words that begin with q.

If you need to specify both a first and a last letter for your word, try typing something like <[wW][!]@s> in the Find field. You'll locate all words that begin with the letter w and end with the letter s.

Again, this makes sense if you take it one step at a time. The angle brackets on each end mean that the expression encompasses a single word and that the first character can be either an uppercase or a lowercase w. The exclamation mark means "not," so [!] translates as "any character that is not a space" (there's a space after the exclamation mark). So [!]@ means "one or more characters in a row that are not spaces." The s at the end means that the last character of the word must be an s. This expression would find waits, waters, and even gibberish like w3%hU;s.

Advanced techniques

It isn't hard to replace the single phrase Speaker: Howard Phyques with Speaker: Phyques, Howard, but it might get tiresome if you had hundreds of names to reformat this way.

Instead, search for Speaker: (<[A-z]@>) (<[A-z]@>). The phrase (<[A-z]@>) means simply "any word consisting of one or more uppercase or lowercase letters." So your Find field tells Word to search for Speaker: followed by a space and two words.

Notice that in this example we've put each regular expression in parentheses. This lets you use shorthand to refer to each portion separately in the Replace With field: the \1 stands in for the first name, \2 stands in for the last name. Or you can reverse the order and place a comma between the names by typing this into the Replace With field: Speaker: \2, \1.

Clean up quickly Anyone who has received a long story as an email message knows that cleaning up the weird line breaks, brackets, and more can be painful. For example, I keep many emails in which Web URLs are enclosed in angle brackets. I remove the angle brackets and make the URLs italic because I think they look better that way in print. But I can't just search for everything between angle brackets – people also use <— and <= as left-pointing arrows in their e-mail messages.

No problem. First, I search for \<([!-=]@)\>. The backslash before each angle bracket tells Word that I'm actually searching for the angle bracket character – I'm not using the angle bracket as regular-expression code.

Next, I put the code (which represents a URL) inside parentheses so that Word sees it as a separate entity. That will allow me to do two things. First, I'll be able to more easily strip out the angle brackets that surround the URLs. Second, I'll be able to use the handy shorthand \1 to represent the code in the Replace With field. The code itself, [!-=]@, translates as "a string of one or more characters that are anything except a hyphen or an equal sign."

For the love of wild text

The human brain is the best pattern-recognition device in the world, but when it comes to editing long documents, regular expressions have us beat. Build a few regular expressions, and you'll find yourself hooked – and much more productive in your work. MW

Find it fast

Here's a quick reference for Microsoft Word X's regular-expression codes. Note that some of these differ from the standard codes used in most other programs and languages (a fact that will really irk many geeks). Also, some codes supplied by Word's documentation don't work. With luck, later versions of Word will squash these bugs.

To find	Type this wild card	Example
Any single character	?	d?g finds dog, dig, and dug.
Any string of characters	*	c*d finds cod, cold, and can't have said.
One of the specified characters or expressions	[ ]	vote[ds] finds voted and votes.
Any single character in this range (range must be in ascending order)	[-]	[A-Z] finds any single uppercase character [0-9] finds any numeral
Any single character except the characters inside the brackets	[!]	hi[!t] finds him and his but not hit.
Any single character except characters in the range inside the brackets	[!-]	[!4-6]/15/0? finds dates with 15 as the day, except those in April, May, or June, in any year between 2000 and 2009. (It will select only the last seven characters of dates with two-digit months.)
One or more occurrences of the previous character or expression	@	10@ finds 10, 100, 1000, and so on (because of a bug, Word may select only the first two digits).
The beginning of a word	<	<w finds the first letter in any word that begins with a lowercase w.
The end of a word	>	nd> finds the nd in mind and kind but not in window.

Develop Safari's power

Use JavaScript code to speed and enhance Safari's Web-browsing capabilities. By Dori Smith

The simplest and most powerful tools that can be added to a browser are things you may not even have heard about. Bookmarklets, also called favelets, are small bits of JavaScript you run in your browser just by clicking on a bookmark. You can use them to see what's behind successful Web sites, to control the way Safari handles windows, and more.

There's a common misconception that Apple's Safari Web browser doesn't support bookmarklets. This is not true. You just need to do a little one-time futzing around in JavaScript to get them up and running.

Installing bookmarklets

Before you can use bookmarklets, you need to install them in Safari. There are two ways to do so: the easy and the not-so-easy. Both methods require that you have the Bookmarks bar showing, so press ⌘-B to make it appear.

The easy way requires a Web page with a link containing a bookmarklet. Then you can simply click on the link and drag it onto your Bookmarks bar.

Since some bookmarklets need to be altered to work in Safari, you won't always be able to use the easy method. Plus, you might want to write your own. In that case, you'll need to crack open a text-editor, such as Bare Bones Software's BBEdit or Apple's TextEdit. You'll write the bookmarklet's code (without line breaks), copy it, and paste it into Safari's address bar. Then you can click the globe icon in the address bar and drag the icon to your Bookmarks bar.

Whichever method you use, Safari will ask you to enter a name for the new bookmarklet. Type one and click on OK, and that's all there is to it – as long as your bookmarklet code works perfectly. If not, you'll need to edit it. Control-click on the new bookmarklet to get a contextual menu, and then choose Edit Address. The Bookmarks pane will appear with your cursor positioned in the address field. Fix the code, and you're ready to go.

Now let's check out some bookmarklets I've written that work as is. For your copy-and-paste convenience, all of this code is available at **www.macworld.co.uk/features**.

Control your browser

If you've surfed to a site that has decided it knows more than you do about what size Web page you want, show it who's boss with this bookmarklet: javascript: resizeTo(700,screen.availHeight);moveTo(0,0).

This will resize the browser window to be 700 pixels wide and as tall as your screen will allow (resizeTo(700,screen.availHeight)). It will also move the top left corner of your browser to the top left corner of the current window (moveTo(0,0)).

Do you want your browser to be on the right-hand side of your screen? No problem – just use the following bookmarklet: javascript: resizeTo(700,screen.availHeight); moveTo(screen.availWidth-700,0).

We start by resizing the window to our desired height and width. We again end by placing the top-left corner of the browser window just where we want it. Because we know the window is 700 pixels wide, we want it to be placed at the full screen's width minus 700 pixels (so the top right corner of the browser will be exactly in the top right corner of the screen).

I keep both of these on Safari's Bookmarks

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Check out...

- **Bookmarklets** (www.bookmarklets.com) The site that started it all is a little out-of-date, but it's still a good place to begin.
- **Favelets** (www.favelets.com) There's a strong preference here for Internet Explorer for the Mac (not surprisingly, as the site's owner used to work on the product team), but there are lots of great bookmarklets for Web developers.
- **The Apple Web Site** (www.apple.com/applescript/safari/bookmarks.html) Apple calls them bookmarks instead of bookmarklets. Here it shows how to do cool stuff like making Safari use Sherlock and iTunes to look up information.
- **JavaScript World** (www.javascriptworld.com)The companion site for the book JavaScript for the World Wide Web: Visual QuickStart Guide, fifth edition, has a chapter on bookmarklets, and all the code from the book is available free on this site.

Geek favourites

It's hip to be square at **www.cubeowner.com**. Peruse the extensive FAQs and forums for answers to your every Cube question. Learn how to upgrade your Cube and how to find replacement parts. Check out the member photo gallery (an example is shown here). Or just socialize with fellow Cube-lovers.

Scholle Sawyer McFarland

bar with the original names Left and Right, so I can position Web pages side-by-side with a single click. This is particularly helpful when I'm comparing two pages – and if you have this bookmarklet in multiple browsers, you can compare how the same page looks in all of them, as long as all the windows have identical dimensions.

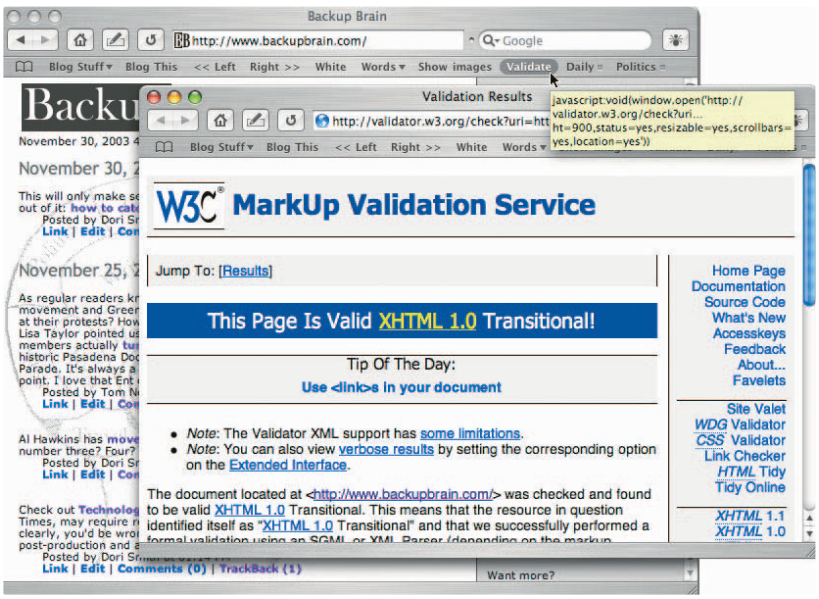
Web-developer tools

If you're a Web developer, you already spend too much time working with your browser – so why not make it work as hard as you do? These handy bookmarklets will make Safari do its share of the heavy lifting.

Validate pages Want a fast way to find out whether a Web page conforms to the W3C's standards? Here's a simple bookmarklet that does just that. With one click, it opens a new window that contains the results of the W3C's validation check on your current Web page (see "One-click validation"). Here's what you'll type in Safari's address bar: javascript:void(window.open('http://validator.w3.org/check?uri='+window.location.href)).

This bookmarklet tells the browser to use JavaScript (javascript:void) to open a new browser window (window.open) and then tells that window to load the page at **http://validator.w3.org/check**, with the uri parameter set to the value of window.location.href. That last bit (window.location.href) is JavaScript's way of describing the current page's URL.

One-click validation
Click the Validate bookmarklet to open a new Web page that shows whether the current page is, in fact, valid XHTML.



Check images quickly Have you ever wanted to see what the images on a Web page look like separate from the layout and content on the page? Or have you wondered what an image's URL is or what its dimensions are? A quick click on a bookmarklet can reveal all. To see the bookmarklet's code, go to the "Check Images Quickly" section of the online article.

If you know anything about JavaScript (or even a bit of HTML), you can see that this script searches the current Web page for images and then builds a table containing each image, its height, its width, and its URL. When they've all been found, a new window is opened (as in the previous example), but instead of loading a specific URL, the page that you've just created is loaded on-the-fly.

One quick Safari fix

If you like what you've read about bookmarklets so far, you may have already rushed off to Google to see what others you can dig up. It won't be long before you discover that many of them don't work, as is, in Safari.

There are differences in the way various Web browsers understand JavaScript. For example, bookmarklets for Microsoft Internet Explorer and Netscape don't always work in Safari. One common problem is the JavaScript command document.getSelection(), which grabs the currently selected text. Safari understands the command window.getSelection() instead. Changing that code won't magically make all bookmarklets work with Safari, but it does fix many. It's a good place to start.

getSelection in action One example is a bookmarklet that lets you select a word on a Web page and look it up at Dictionary.com. (If you haven't selected a word, a prompt will ask you for one.)

Just change document.getSelection() to window.getSelection(), and this bookmarklet works beautifully. For our edited version of this bookmarklet, go to the "GetSelection in Action" portion of the online article.

Blogging with bookmarklets The same wayward code has also been a stumbling-block for a large number of would-be Safari users: Webloggers. Most Weblog tools provide Blog This or equivalent bookmarklets for creating new blog posts. However, they provide them only for Netscape and Internet Explorer, leaving Safari users to choose between not blogging and using some other, lesser browser.

You no longer have to choose – just get your vendor's bookmarklet and modify it. For an example, go to the "Blogging with bookmarklets" section of the online article. All I had to do was change the JavaScript statement document.getSelection() to window.getSelection().

Beyond the bookmarklet basics

This article can give you only a quick overview of what bookmarklets are and how you can use them. But with a bit of experimentation, you'll find that the addition of a few bookmarklets will turn your browser into a Web developer's power tool. **MW**

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• Convert iTunes formats • Terminal tricks • Mac-video tips

Mac Help

Handy tips and readers' questions answered. By Christopher Breen and Rob Griffiths

Becoming a convert

Q I imported my CDs into iTunes as AIFF files. Now that I have an iPod, I'd like to convert those songs to the AAC format. Is this possible or must I rerip all my CDs?
Steve Hawley

A You don't need to feed the CDs to your Mac again, as you can use iTunes to convert files from AIFF to AAC. To do so, launch iTunes and select Preferences from the iTunes menu. Click the Importing tab in the resulting window, select AAC Encoder from the Import Using pop-up menu, and click on OK to close the Preferences window.

In the iTunes window, select all the songs you want to convert, and choose Advanced: Convert Selection To AAC. All the selected songs will be duplicated, leaving you with two copies of each song – the original AIFF file and the new AAC version.

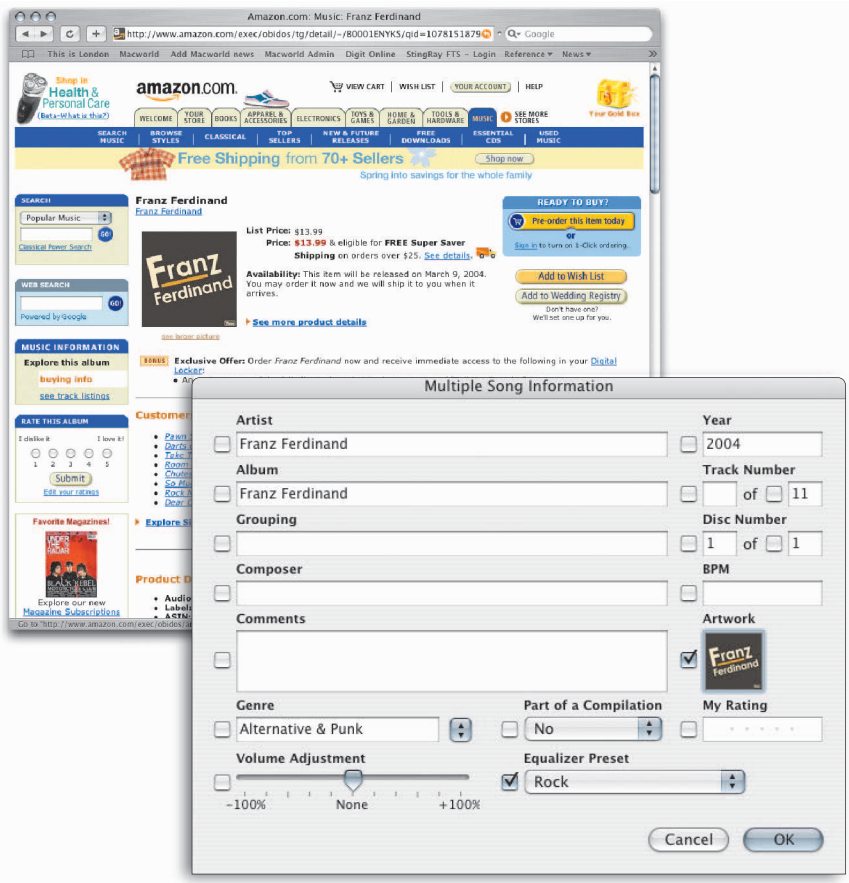
To easily locate and delete the AIFF files, choose View Options from the Edit menu, and in the View Options window that appears, enable the Date Added option and click on OK. Click the new Date Added heading in the iTunes window to sort your songs by the date they were added to your iTunes library.

The new AAC files will appear at the top of the list; the older AIFF tunes, at the bottom. Select the AIFF files and press the delete key to remove them from the library.

Office annoyance

Q I'm on a closed Ethernet network within my company and use Microsoft Office v. X. Everyone in the office has his or her own copy of the software, yet my copy of Entourage quits at least twice an hour due to a licence-conflict message. I have installed a brand-new copy of Office, and the same problem still occurs. Any thoughts on this?
Paul Rosenblit

A What you're seeing is the licence-checking "feature" that was built into early versions of Microsoft Office v. X. It was created so that you couldn't run the same copy of Office on multiple Macs. Fortunately, this feature disappears after you install the Microsoft Office v. X 10.1.2 Update (**www.microsoft.com/mac/download/officex/OfficeX_1012.asp**).



The art of iTunes (above)

TIP iTunes album art is stored in each song file. The advantage to this scheme is that when you move a song from one computer to another, the album art moves with it. The slight disadvantage is that song files with artwork are a bit larger than those without. To see the difference for yourself, drag a song file out of iTunes and onto the desktop. Select it, press ⌘-I, and make a note of its size.

Now go to Amazon.com and download the album art for that song. Highlight all the songs from that album in iTunes' main window, press ⌘-I, and drag the JPEG art file you grabbed from Amazon into the Multiple Song Information window's Artwork field. After clicking OK to close the Multiple Song Information window, you'll find that all the songs you selected now carry the album art.

Drag the original song's file to the desktop and press ⌘-I to view its size. The file is larger – how much larger depends on the complexity of the album art.

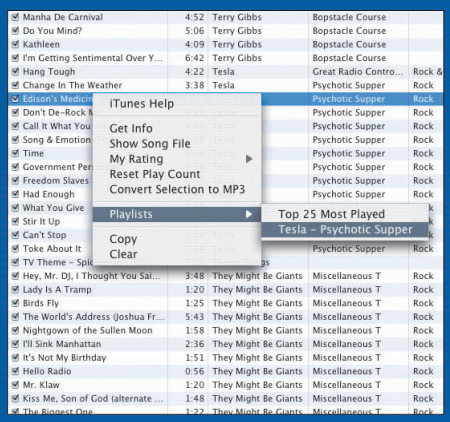
continues page 212

macromedia DIRECTORMX 2004 Interarchy 7 Interarchy 6.3 Rally Shirt 99 FREE fonts PerfectPIM

Unsolicited advice: a few quick iTunes tips

TIP It's easy to create a playlist from selected songs – a much quicker method than manually dragging between columns: simply choose iTunes: File: New Playlist From Selection. Here are a few more tips to make your iTunes life easier:

- Control-clicking on column names, playlist icons and song names always produces a contextual menu full of useful options. A particularly handy one is the ability to locate all playlists that feature a given song (right). Selecting a playlist will open it in the iTunes window, with the selected track highlighted.
- If you've a fast Internet connection, it may be worth altering the buffer size for shared music libraries, radio stations and (when it arrives in the UK) the iTunes Music Store. Select iTunes: Preferences (or press ⌘-comma), click the Advanced pane, and choose the Small buffer size. This will make connecting much quicker – and if the connection is fast enough, you shouldn't experience drop-outs. Likewise, if you're accessing on a modem, choose Large for smoother playback.
- Playlists containing multiple albums can be awkward to navigate. To skip to the first song in the next album, simply press Option-right arrow.



Stop the senseless screen clearing

TIP Have you noticed that certain Unix commands in OS X 10.3 (such as vi, less, and man) finish by clearing the screen? If you're reading a manual page and want to copy-&-paste a portion of it, having the screen clear when you exit the manual-page viewer is highly annoying.

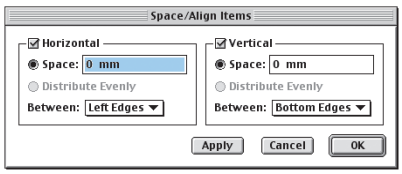
To solve this, open Terminal's preferences and set the Declare Terminal Type ($TERM) As pop-up menu to vt100 (see "A clear winner"). The next time you create a Terminal window, you won't be bothered by the unrequested clear-screen action. If you ever want the old behaviour back, just set the pop-up menu to xterm-color.

Precision alignment in XPress

TIP Here's a simple QuarkXPress trick to make the corners of rules placed at right-angles to each other intersect exactly, rather than snapping to the middle of their endpoints. Simply use the Space/Align Items dialog box (⌘-, (comma), or Item: Space/Align).

In the example to the right, we set the space to 0mm (since we want the rules to overlap slightly) for both horizontal and vertical, then selected Right Edges (to move the horizontal rule to the right-most edge of the vertical one) and Top edges (to move the vertical rule to the top of the horizontal one) to align them perfectly.

Alternatively, use identical X and Y co-ordinates, but shift each rule by half its width (4pt for an 8pt rule, for example) to join them together manually.



Join together
Use QuarkXPress's Space/Align Items dialog box to create crisp corners when joining rules at right-angles to each other.

Console capers

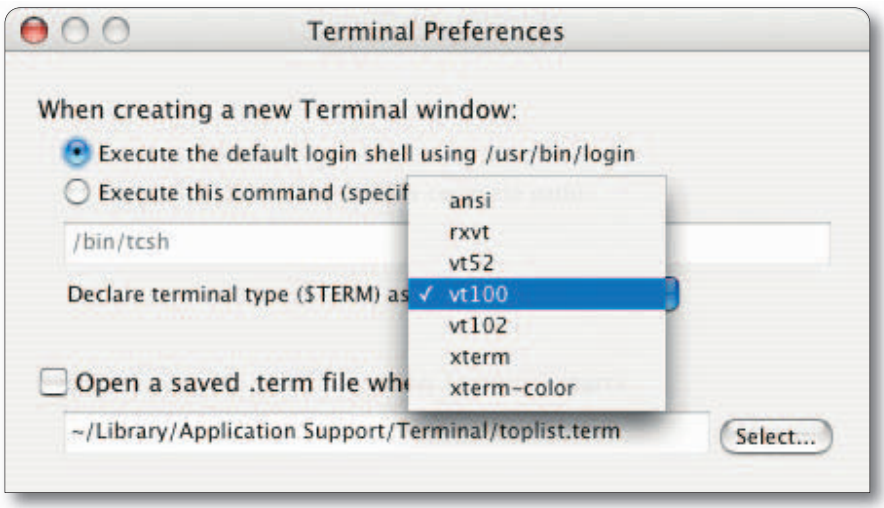
Q **While glancing through the console.log file on my computer, I found an entry that reads "I got a control baby!" Am I being hacked?**
Fausto E Castillo

A No, what you see is programmerspeak. That message is generated by Microsoft Office v. X's WordPDE.plugin and is harmless.

Rummaging through page after page of a log file is more likely to confuse – rather than inform – the average user. But you can put Console and log files to good use.

If, for example, an application crashes every time you perform a particular action, launch Console (found in the Utilities folder within the Applications folder), click the Clear button to remove other entries from the log, and then perform that action. After The Bad Thing happens, return to Console and see what it has to say.

Granted, a message that reads "Assertion failure in -[NSMenu itemAtIndex:], Menus.subproj/NSMenu.m:638" won't enlighten most of us, but the person or company responsible for the well-being of your ailing application may appreciate such an informative bug report.



A clear winner
By changing your declared Terminal type to vt100, you'll prevent certain Unix commands from clearing the screen when they finish their tasks.

Picture perfect

TIP Did you know that TextEdit, the simple but very useful word processor included with OS X, supports various image formats? Just select the required file in its location on your hard drive and drag it onto an open TextEdit document.

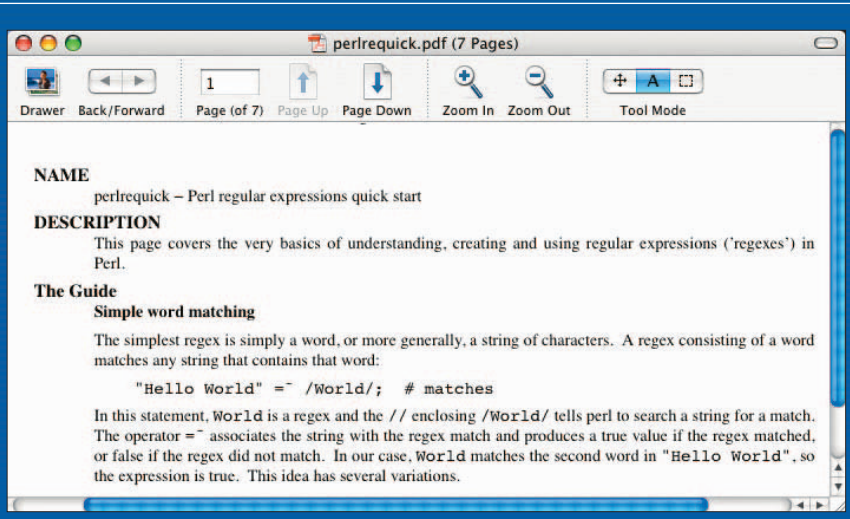
The selected image can be positioned horizontally by using the text-alignment buttons, and vertically by using the return key. I've done this with tiff, jpeg, eps and gif files, but more formats are sure to be supported. I've tried this with version 1.3 only, and find it useful

Unix tip: Use Terminal to create PDF documents

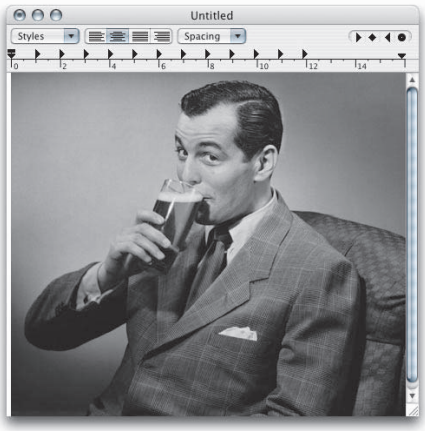
TIP You might have a hard time reading the long, complex Perl manual in Terminal – it isn't the best way to read such documents. Luckily, Panther includes some Unix utilities that make it a snap to view any manual page as a nicely formatted PDF document. For example, you can open the previously mentioned perlrequick manual in Preview with these two commands:

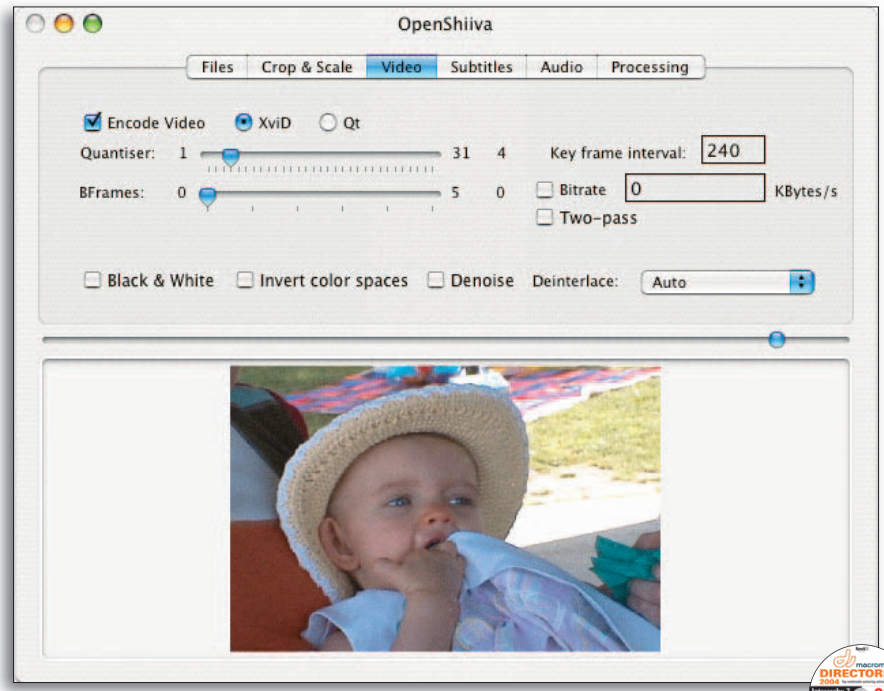
```
man -t perlrequick > /tmp/perlrequick.ps
open /tmp/perlrequick.ps
```

The first command converts the manual into a PostScript file. Executing the open command will then tell OS X to convert the PostScript document into a PDF – complete with boldface type and other formatting intact – and launch Preview. Using Preview, you can search, print, and easily scroll through the manual. Files saved in the /tmp folder are erased each time you reboot, so you don't need to worry about using up disk space with temporary manual-page files. There are GUI alternatives (ManOpen and manThor, for example) that do the same thing, but this hint is quite handy if you're already working in Terminal and just want to take a quick look at a long manual.


perlrequick.pdf (7 Pages)
Drawer
Back/Forward
1
Page (of 7)
Page Up
Page Down
Zoom In
Zoom Out
Tool Mode
NAME
perlrequick – Perl regular expressions quick start
DESCRIPTION
This page covers the very basics of understanding, creating and using regular expressions ('regexes') in Perl.
The Guide
Simple word matching
The simplest regex is simply a word, or more generally, a string of characters. A regex consisting of a word matches any string that contains that word:
"Hello World" =~ /World/; # matches
In this statement, World is a regex and the // enclosing /World/ tells perl to search a string for a match. The operator =~ associates the string with the regex match and produces a true value if the regex matched, or false if the regex did not match. In our case, World matches the second word in "Hello World", so the expression is true. This idea has several variations.

Easy read
A few quick Unix commands are all you need to view manuals as PDFs.





Video on demand
Use a tool such as OpenShiiva to extract video from a DVD. It's included on this month's cover CD 1.

for placing my scanned signature on letters when I print multiple copies.
Ray Page

Move videos onto your Mac

Q I recently purchased a Sony DCR-DVD100 camcorder that writes its output directly to DVD. Although I can copy the output files to my hard-drive and play the video clips using Apple's DVD Player, Sony didn't supply Mac-compatible DVD-editing software with this product. Is there any software I can use to edit my movie clips?
Stephen Hart

A The difficulty isn't so much finding software to edit the movie clips – you can use Apple's iMovie once you get your video out of the camera and onto your Mac. The problems are that the DCR-DVD100 lacks a FireWire port and that, as you've discovered, the bundled software is incompatible with Mac OS.

To move video from this camcorder to your computer, you must either use the camera's S-Video port in league with an analogue-to-digital converter such as Canopus's £199 (excluding VAT) ADVC100 (**www.canopus-uk.com**) or extract the video from one of the finished DVDs the camera produces.

To extract the video, convert the VOB (Video Object) files on the DVD to a format compatible with QuickTime. For this task, I use OpenShiiva (**openshiiva.sourceforge.net**) to convert the VOB files to MP4 files (above). After the files are saved in the MP4 format, drag them into iMovie, where they'll be converted to a format acceptable to it. Note that this technique is also useful when you've burned a video with iDVD and deleted the source files from your hard drive, and you later need to extract the video files from the DVD for re-editing.

Clipboard from the Terminal

TIP Although you can use the mouse to highlight, copy, and paste text between Terminal and other OS X

continues page 212

Unix tip of the month: Speak your mind

TIP Panther includes a new Unix command, say, for taking advantage of OS X's speech capabilities. (Jaguar users can use osascript -e 'say' to get the same result.) Why might you want to do this? For one thing, it's kind of fun.

Type say "hello world" for a demonstration of the say command. But there's much more to it than that; say has some intelligence, too. Type say "I love Mac OS X" and notice how it's pronounced, then try say 723052952 for an example of how the command handles numbers.

If you have remote access to your home Mac via the SSH protocol and there's someone in your house while you're at work, these two commands might be fun to use after remotely connecting to the home machine:

```
osascript -e 'set volume 10'
say "Help! I'm trapped in this Mac!"
```

The first line executes an AppleScript that maximizes the volume setting on your machine before speaking what's on the second line.

But there are serious reasons to use say, too. Using its -f and -o options, you can convert a text file into an audio file for use on an iPod or other portable device. Just type say -f *somefile.txt* -o *spokenfile.aiff*, where *somefile.txt* is the name of the text file and *spokenfile.aiff* is the name of your output file.

OS X (Panther only) will quickly create an AIFF file, and you won't even have to listen to say read every line in the file as it's created. You might also want to use the -v flag to set which voice to use – you can specify any of the voices from the Speech preference pane (-v Junior, for instance).

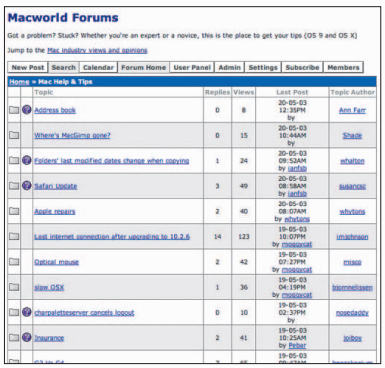
GET QUICK ANSWERS HERE

Macworld contributing editors Christopher Breen and Rob Griffiths answer readers' questions and selects reader-submitted tips for this column.

Tips: Send your tips (include your address and phone number, and mark Q&A in the subject line of the email) to **qanda@macworld.co.uk**. We pay £25 for each tip published here. We regret that we cannot make personal replies.

Questions: If you have a question, the fastest way to an answer is via Macworld's forums: go to **www.macworld.co.uk/forums**. The Mac Help & Tips Forum should be your first port of call. You need to register to use the forums, but it's free.

The forums are where Macworld editors and a host of Mac know-it-alls make it our business to put your Mac back in the pink. Before you post your cry for help, search the forum for similar queries. It's likely that if you're having problems, then someone else has already encountered and maybe even solved them.


Macworld Forums
Got a problem? Stuck? Whether you're an expert or a novice, this is the place to get your tips (OS 9 and OS X)
Jump to the Mac industry views and opinions
New Post | Search | Calendar | Forum Home | User Panel | Admin | Settings | Subscribe | Members
Home > Mac Help & Tips
Topic | Replies | Views | Last Post | Topic Author
Address book | 0 | 8 | 20-05-03 12:35PM by | Ann Farr
Where's MacGimp gone? | 0 | 15 | 20-05-03 10:44AM by | Shade
Folders' last modified dates change when copying | 1 | 24 | 20-05-03 09:52AM by ianfab | whalton
Safari Update | 3 | 49 | 20-05-03 08:58AM by ianfab | suzanne
Apple repairs | 2 | 40 | 20-05-03 08:07AM by whelons | whelons
Lost internet connection after upgrading to 10.2.6 | 14 | 123 | 19-05-03 10:07PM by mogocat | imiehnson
Optical mouse | 2 | 42 | 19-05-03 07:27PM by mogocat | misco
slow OSX | 1 | 36 | 19-05-03 04:19PM by mogocat | bjornnelissen
charpelletserver cancels logout | 0 | 10 | 19-05-03 02:37PM by | nosedaddy
Insurance | 2 | 41 | 19-05-03 10:25AM by Peter | jolbox

applications, you can also access the Clipboard via the Unix commands pbcopy and pbpaste. Consider ls -al, a command that lists a directory's contents, including ownership and permissions. You may want to email the output to your IT person to troubleshoot a problem you're having.

If you were using the mouse, you'd run the command, then highlight its output on screen (scrolling up and down as necessary), press ⌘-C to copy the selection to the Clipboard, and then press ⌘-V to paste it into a document or email message.

If you use pbcopy, however, the process is much simpler and faster. Just type ls -al | pbcopy. This command creates the directory listing (ls -al) and then sends the listing to the pbcopy command, courtesy of the pipe (the vertical bar, |).

On screen, you won't see any output from your command. But if you switch to your email program and press ⌘-V, the directory listing will magically appear. Or type pbpaste > listing.txt to paste the Clipboard's contents into a file named listing.txt.

Change end-of-line characters

TIP If using text files as inputs for static HTML pages or as scripts for the Apache Web server, you may find a file that looks right but just doesn't seem to work.

It's possible that this problem is caused by an end-of-line character that Unix doesn't understand – the GUI and Unix sides of OS X use different sets of characters to indicate a new line. If you open the suspect file using the vi editor (change to the file's directory and type vi *filename*) and see a whole bunch of ^M characters, then you have Mac end-of-line characters in your file.

The presence of these characters may cause problems for the built-in Web server, so you'll need to remove them. You could fix the problem by opening the file in Bare Bones BBEdit, selecting Save As, clicking the Options button, and setting the Line Breaks pop-up menu to Unix.

Terminal, however, provides a quicker and easier solution. For example, to convert all the line breaks from Mac to Unix style in the file foo.txt, you'd type perl -pi -e 's/\r\n?/\n/g' foo.txt.

Perl is a programming language, and it's doing the dirty work in the conversion. The -pi argument tells Perl to act on every line in the file and to write its changes back to the same file; -e tells Perl to run the following command as a script.

The really complex-looking bit is what actually does the work: s is the substitute command, the forward slashes (/) are separators, \r\n? is the string that finds the Mac line endings (a return followed by a new line), and \n is the new Unix line ending (a new line by itself) to be used as the replacement. Finally, g tells Perl to make the substitution globally – that is, for every match it finds in the file.

The command will execute very quickly, and a follow-up check with vi will show that the Mac line endings are indeed gone.

Losing the light

Q Since installing Panther on my 17-inch PowerBook G4, my keyboard doesn't always light up in dark conditions. Do you have any suggestions?
Mitch Santell

A Judging by messages posted in Apple's Discussions forum, robust keyboard backlighting on the latest PowerBooks remains a work in progress. Although some people found relief only by returning the PowerBook to Apple for repair, others fixed the problem by performing some of the following actions:

1. Cover the speaker grilles with your hands. The ambient light sensor is under the grilles, and covering them briefly may force the keys to shine.

2. Reset the Power Manager and zap the PRAM. To reset the Power Manager, turn off the PowerBook, simultaneously press and release Control-Shift-Option and the power button, wait five seconds, and then press the power button to restart the PowerBook. To zap the PRAM, restart the Mac while holding down the ⌘-Option-P-R keys and wait for the Mac to chime three times. Let go of the keys and the PowerBook will start up.

3. Repair permissions with Disk Utility.

If none of these procedures work, it's time for your PowerBook to take a trip to Apple.

Mounting issues

TIP Occasionally I'll download a disk image that doesn't mount due to a "no mountable filesystems" error. I've learned that I needn't discard these images. Instead, I launch Disk Utility, drag the disk image into the list of volumes, select the image, and click Repair Disk. If it can be repaired, Disk Utility will fix it, and afterward the disk image mounts.
Nathan Wilairat

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Macworld Buyers' Guide

Apple divides its Macs into consumer and professional, and desktop and portable. But just because you fancy an iMac, don't rule out a portable – you might be surprised how much a PowerBook or iBook suits you. And some users may require a "pro" machine even if they class themselves as a "consumer". Decide what it is you want to do, and follow our advice here.

Desktop or portable

If you're often on the move, consider an iBook or PowerBook. You can easily hook each up to a larger monitor and separate mouse on a desk when you're back at base. They're easy to hide away, and with AirPort wireless networking, you can access the Internet up to 150-feet away from your telephone connection.

Apple's portables come loaded with every high-tech port needed, unlike most Windows laptops. The iBook is ultra-small, lightweight and, importantly for students, relatively impact-resistant – and even its 12-inch screen is still sizeable. The pro PowerBook G4 is super-thin and lightweight, and boasts screens from 12 to 17 inches. Its set of ports, including S-Video and Gigabit Ethernet, is impressive – as is its DVD-R SuperDrive.

Performance

Gauging speed by **processor** megahertz ratings is the easy – but incorrect – way to judge performance. You must take into account the amount of memory, the size and speed of the hard disk, graphics card and video memory, and size of cache.

The PowerPC G5 processor is a super-fast, next-generation 64-bit chip from IBM. If blistering performance at the bleeding edge is what you need, a Power Mac G5 is a must.

The PowerPC G4 processor from Motorola drives the Power Mac G4, PowerBook, iMac and eMac. It is specially optimized to speed-up selected programs via AltiVec technology.

Apple now uses two PowerPC processors: the **G4** and **G5**. Both include AltiVec technology that makes specially optimized software run even faster. The full potential of the G5 will be realized when software – and especially the operating system – is optimized for its 64-bit architecture. Currently, nearly all software runs at the G4's 32-bit level. That said, the G5 is still faster – but not enough to disregard the speedy G4, which has plenty of life left in it yet.

Word-processing, spreadsheets, email and Web browsing don't require the very fastest processors, but digital photography, video, and graphics do.

The more memory (**RAM**) you have on your Mac, the faster your applications will run, and you'll be able to keep more programs open at the same time. We recommend you upgrade the memory to *at least* 512MB of RAM.

Fitting extra RAM to a Mac is easy, but get your reseller to fit it if you're nervous. Depending on which model you buy, an extra 256MB can cost as little as £35 online (try **www.crucial.com/uk**), and adding 512MB more will set you back about £100. RAM for portables often costs more.

Cache is a memory subsystem that stores frequently used RAM data for even faster processing access. It's necessary because most computers suffer from performance bottlenecks that slow data down as it travels around the system. The Power Mac G5 features super-fast interconnects, and so requires less cache – the data speeds around fast enough without it.

Most consumers won't get near filling their **hard disk** with their AppleWorks files, digital snaps and Web downloads. Video-editors and iTunes users, however, will require a larger disk. Get as many gigabytes as possible. You can't upgrade the hard drives in the iBook, PowerBook, iMac or eMac, but you can add inexpensive external FireWire disks.

A **video card** connects a Mac to its display. Serious gamers and creative professionals should aim for one of the ATI Radeon or NVidia GeForce4 cards found in Power Macs, with 64MB of video RAM onboard. You can't later upgrade the video card in any of the other systems – but this shouldn't matter for many users.

Features

Apple differentiates its Mac models by type of optical drive: CD or DVD. All Macs come with at least a combination **DVD-ROM/CD-RW** drive that can read and writes CDs, and can play DVDs and DVD movies. The **DVD-R SuperDrive** does all that, and writes DVDs (DVD-R) of iMovies and digital snaps that play in domestic DVD players. The desktop Macs' SuperDrive writes to DVD at 4x-speed; the PowerBook's at 1x-speed.

All Macs come with top-of-the range connectivity features. Networking is at least 10/100BaseT **Ethernet**, with 1,000BaseT for Power Macs and the 15-inch and 17-inch PowerBooks.

All Macs offer at least two USB **ports** for peripherals, and at least one FireWire 400 (400Mbps) for digital video and peripherals. All now boast 480Mbps USB 2.0, except the eMac's older 12Mbps USB 1.1. USB 2.0 is compatible with USB 1.1 devices. The eMac's FireWire port makes the lack of USB 2.0 relatively meaningless. The 15-inch and 17-inch PowerBooks and Power Mac G5 include a FireWire 800 port (800Mbps).

All Macs ship with an internal 56Kbps modem. If you're frequently connected to the the Internet for long periods of time (especially in peak weekday times), you'll probably save call charges by upgrading to a faster **ADSL** broadband connection. You'll need to add an ADSL modem or router, and pay an ISP from around £23 a month for the faster access – but you pay no call charges no matter how long a Mac is connected, and you can use the phone at the same time. Unfortunately, not all areas are ADSL ready – check your phone number at: **www.bt.com/broadband**.

Apple's **AirPort** wireless-networking technology – based on either the IEEE 802.11b or 802.11g industry standards – lets you browse the Internet from anywhere in your home, up to 150 feet away from your phone line or Ethernet connection. AirPort uses radio waves, so it even works through walls. The latest Macs use **AirPort Extreme** (802.11g), boasting 54Mbps speeds, compared to the older AirPort's 11Mbps.

All Apple's new Macs come with the top-quality **iLife** suite of integrated digital-lifestyle software. **iMovie** is a simple but powerful digital-video editor

that works with FireWire. **iTunes** is music 'jukebox' software that can manage MP3 and AAC files, and burn audio CDs. **iPhoto** is a superb program that helps import, edit, organize and share digital photos. DVD-R SuperDrive models come with **iDVD**, which makes creating DVDs a doddle. Some Macs also ship with **AppleWorks** – a suite of easy-to-use business programs. The consumer Macs also ship with reference CDs and games.

Apple charges £69 per year for its online-based iTools, now called **.Mac.** You get an email address, 100MB of free Web space, simple Web-site templates, backup and virus protection.

Apple and its partners have made great efforts to ensure that Macs are largely **compatible with Windows PCs**. USB and FireWire help on connectivity. Emulation programs such as Virtual PC can run Windows software straight from a Mac.

Key applications, such as Microsoft Office, Adobe Photoshop and Macromedia Dreamweaver are all fully compatible with their Windows counterparts. You can swap Word, Excel and PowerPoint documents between the platforms.

Education pricing

Apple offers special pricing for educational users. Institutions such as schools and colleges get the biggest discounts. Teachers and students get about a 9 per cent discount via the online Apple Store – click on Education. **MW**

continues page 216

UPDATED 22/10/03

The main selling points of the **iBook** are its compact, lightweight, impact-resistant case and low price. Its processor has recently been upgraded to a G4, which makes it a very capable OS X machine.

The 256MB RAM is fine for OS X and a couple of programs, but performance will be boosted greatly by adding as much as you can. Via the Apple Store, the maximum 640MB of RAM will cost £120; via an online reseller, as little as £90.

The iBook ships with iMovie, iTunes and iPhoto, as well as the World Book encyclopedia and a couple of games. Word-processing, database, spreadsheet, presentations and graphics tools are provided by AppleWorks.

S-Video and composite video output require a £15 Apple Video Adaptor. Video mirroring to a projector or monitor is via the Apple VGA Display Adaptor.

Pros: Small enough to slip into a backpack, tough enough for schoolkids, the iBook is a more than capable and affordable consumer portable.

Cons: Requires more RAM. Ask for a larger hard-drive in the 12.1-inch model if you're an iTunes or iMovie user. The 14.1-inch model has a larger viewing area, but no more pixels and is half a kilo heavier.

All iBooks:
Video card: 32MB ATI Mobility Radeon 9200. **Resolution:** 1,024-x-768 pixels
Memory: 256MB (Max: 640MB)
Cache: 256K L2
USB 2.0: 2 **FireWire 400:** 1
Ethernet: 10/100BaseT **AirPort:** 54Mbps

■ Entry-level 12.1-inch TFT:
Processor: 800MHz G4
Hard disk: 30GB
Optical: DVD-ROM/CD-RW
Weight: 2.2kg **Price:** £849
Star Rating: ★★★★/8.4

■ Entry-level 14.1-inch TFT:
Processor: 933MHz G4
Hard disk: 40GB
Optical: DVD-ROM/CD-RW
Weight: 2.2kg **Price:** £999
Star Rating: ★★★★/8.4

■ High-end 14.1-inch TFT:
Processor: 1GHz G4
Hard disk: 60GB
Optical: DVD-ROM/CD-RW
Weight: 2.7kg **Price:** £1,199
Star Rating: ★★★★/7.8

UPDATED 22/10/03

For the consumer/education market, the **eMac** offers a fast G4 processor, large CRT screen (with surprisingly small footprint), multiple optical-drive options, and superb pricing. It measures up well against the iMac. Its built-in 17-inch CRT display offers more screen-space at larger resolutions than the 15-inch LCD iMac. It costs a lot less than the top-end 17-inch iMac. Many will be swayed, however, by the iMac's LCD screen (think long and hard about screen size) and flexibility.

It's fast enough for consumer and educational tasks (Web, email, word-processing, accounts, digital photography, iTunes, etc), and capable of running even pro applications such as Adobe Photoshop.

Add more RAM; at least 512MB is recommended. Via the Apple Store, this will cost up to £120; online, it can be found for £60. A tilt-&-swivel stand for the eMac costs £49.

The eMac ships with the Apple programs (iMovie, iTunes, iPhoto; and iDVD on the SuperDrive model), as well as the World Book encyclopedia, and Deimos Rising game. Word-processing, spreadsheet, database, presentations and graphics tools are provided by AppleWorks.

Pros: Top features at attractive prices. Impressive screen resolution.

Cons: Requires more RAM. USB 1.1 rather than much faster USB 2.0, but FireWire makes up for this. Not as flexible as iMac. Limited internal expandability (extra RAM and AirPort Card only), although external alternatives are plentiful.

All eMacs:
Processor: 1GHz G4
Screen: 17-inch CRT (1,280-x-960 pixels)
Video card: 32MB ATI Radeon 7500
Cache: 256K L2
USB 1.1: 3 **FireWire 400:** 2 **PCI:** 0
Ethernet: 10/100BaseT **AirPort:** 54Mbps

■ Entry-level:
Memory: 128MB (Max: 1GB)
Hard disk: 40GB
Optical: DVD-ROM/CD-RW
Price: £649
Star Rating: ★★★★/8.8

■ High-end:
Memory: 256MB (Max: 1GB)
Hard disk: 80GB
Optical: DVD-R SuperDrive (4x)
Price: £849
Star Rating: ★★★★★/9.2

UPDATED 08/09/03

The **iMac** boasts a "floating" flat-panel LCD screen that is held by a flexible chrome-pipe neck, allowing you to move it up and down and from side to side to gain a more comfortable viewing experience. LCD screens aren't just kinder to the neck, they're also easier on the eye than CRTs.

While the 15-inch LCD doesn't offer as large a viewing area as the eMac's, the widescreen 17- and 20-inch LCDs are particularly handy for multi-paletted pro applications. Inevitably, the LCD screens make the iMac more expensive than the CRT-based eMac – but offer compelling reasons for the extra outlay. The dome-like base also saves valuable desk space.

The iMacs ship with the great Apple programs (iMovie, iTunes, iPhoto; and iDVD on the SuperDrive model), encyclopedia, games, and AppleWorks.

Pros: Nothing beats the iMac on looks, and the adjustable LCD screen is a real improvement on the static CRT – although the eMac's maximum resolution is greater than the 15-inch G4 iMac's.

Cons: Like the eMac, the G4 iMac has limited internal expandability (extra RAM and AirPort Card only), although inexpensive external alternatives are plentiful.

All G4 iMacs: **Ethernet:** 10/100BaseT
USB 2.0: 3 **FireWire 400:** 2 **PCI:** 0
Hard disk: 80GB **AirPort:** 54Mbps
RAM: 256MB (Max: 1GB) **Cache:** 256K L2
Apple Pro Speakers: Included.

■ 15-inch:
Processor: 1GHz G4
Optical: DVD-ROM/CD-RW
Screen: 15-inch LCD (1,024-x-768 pixels)
Video card: 32MB NVidia GeForce4 MX
Price: £999
Star Rating: ★★★★/8.4

■ Widescreen 17-inch:
Processor: 1.25GHz G4
Optical: DVD-R SuperDrive (4x)
Screen: 17-inch LCD (1,440-x-900 pixels)
Video card: 64MB GeForce FX 5200 Ultra
Price: £1,449
Star Rating: ★★★★/8.6

■ Widescreen 20-inch:
Processor: 1.25GHz G4
Optical: DVD-R SuperDrive (4x)
Screen: 20-inch LCD (1,680-x-1,050 pixels)
Video card: 64MB GeForce FX 5200 Ultra
Price: £1,749
Star Rating: ★★★★/8.7

UPDATED 08/10/03

Despite the arrival of the Power Mac G5, Apple is still selling the minitower **Power Mac G4**. Prices are reasonable, but you don't get the ultimate in performance.

Power users should seriously consider saving for the Power Mac G5, which is far more advanced and potentially a lot more powerful.

The stop-gap Power Mac G4 range offers older specs than those available previously. There's no FireWire 800, USB 2.0, or AirPort Extreme/Bluetooth built in.

But it does offer something that the G5 doesn't: the ability to boot in Mac OS 9. This may interest musicians and designers who are still waiting for OS X-compatible plug-ins. This is the only reason to consider the Power Mac G4 these days.

Pros: The entry-level model is an inexpensive pro-tower that offers OS 9 bootability – still important to some users. The dual-processor machines are well-priced for OS X-fearing power users.

Cons: Uses older specifications than previous G4s; superseded by G5.

All G4 Power Macs:
USB 1.1: 2 **PCI:** 4
FireWire 400: 2
System Bus: 167MHz
Ethernet: 10/100/1000BaseT
AirPort: 11Mbps

■ Entry-level:
Processors: 1 x 1.25GHz G4
Memory: 256MB DDR (Max: 2GB)
Disk: 80GB **Cache:** 1MB L3
Optical: DVD-ROM/CD-RW
Video card: 64MB ATI Radeon 9000 Pro
Price: £999
Star Rating: ★★★★/7.4

■ Mid-range:
Processors: 2 x 1.25GHz G4
Memory: 256MB DDR (Max: 2GB)
Disk: 80GB **Cache:** 2MB L3 per chip
Optical: DVD-ROM/CD-RW
Video card: 64MB ATI Radeon 9000 Pro
Price: £1,239
Star Rating: ★★★★/7.5

■ High-end:
Processors: 2 x 1.25GHz G4
Memory: 512MB DDR (Max: 2GB)
Disk: 80GB **Cache:** 2MB L3 per chip
Optical: DVD-R SuperDrive (4x)
Video card: 64MB ATI Radeon 9000 Pro
Price: £1,489
Star Rating: ★★★★/7.5

POWERBOOKS UPDATED 16/09/03

Its lightweight case and speedy processor make the **PowerBook G4** a genuine alternative to the desktop Power Mac. There are two compact 12.1-inch screen models, two 15.2-inch widescreen, and one large 17-inch widescreen. All now feature the lightweight anodized-aluminium case.

G4 processor speeds start at 1GHz – easily fast enough for pro applications, and the video cards boast up to 64MB of video RAM. Each size has a slot-loading DVD-R SuperDrive model – although this runs slower than that in desktop models.

If you fancy the iBook for its compact size and light weight, but demand more power, the **12-inch** PowerBook is a great choice if you're frequently on the move. Digital video-out is via a mini-DVI port. Connect to an external Apple LCD display with a £75 DVI-to-ADC adaptor. It lacks fastest Gigabit Ethernet – although this won't bother many.

Mobile computers are all about compromise (size against performance and features), and the middle model will appeal to those who can take a little extra weight for the extra screen space. Now that the **15-inch** model is in the aluminium case, with AirPort Extreme and FireWire 800, it is the pick of the range.

The **17-inch** PowerBook boasts the largest laptop screen on earth, and will appeal to video or music pros, who regularly need to take their computers on the road. Size isn't really an issue when travelling, but frequent laptop luggers will be put off by its weight – although it's reasonable for such a large-screen laptop.

All models support dual-screen display using external monitors.
Pros: Lightweight, slim and stylish, there's a PowerBook G4 model for everyone: from compact to giant; USB 2.0 on all models; 1.25GHz 15-inch and 17-inch include backlit keyboard.
Cons: 12-inch has no FireWire 800; 17-inch shows its size by weight.

Both 12.1-inch PowerBooks:
Processor: 1GHz G4 **AirPort:** 54Mbps
Memory: 256MB (Max: 1.25GB)
Cache: 512K L2 **Hard disk:** 40GB
Video card: 32MB NVidia GeForceFX 5200
Resolution: 1,024-x-768 pixels
USB 2: 2 **FireWire 400:** 1 **Weight:** 2.1kg
Ethernet: 10/100BaseT **S-Video:** 1

■ DVD-ROM/CD-RW **Price:** £1,299
Star Rating: ★★★★/8.4

■ DVD-R SuperDrive (1x) **Price:** £1,449
Star Rating: ★★★★/8.6

Both 15.2-inch PowerBooks:
Cache: 512K L2 **Weight:** 2.49kg
Resolution: 1,280-x-854 **AirPort:** 54Mbps
USB 2.0: 2 **FireWire 400:** 1
PC Card: 1 **FireWire 800:** 1
Ethernet: 10/100/1000BaseT **S-Video:** 1
Video card: 64MB ATI Radeon 9600

■ DVD-ROM/CD-RW 15.2-inch:
Processor: 1GHz G4 **Hard disk:** 60GB
Memory: 256MB (Max: 2GB)
Price: £1,599 **Star Rating:** ★★★★★/9.0

■ DVD-R SuperDrive (1x) 15.2-inch:
Processor: 1.25GHz G4 **Hard disk:** 80GB
Memory: 512GB (Max: 2GB)
Price: £1,999
Star Rating: ★★★★★/9.0

■ DVD-R SuperDrive 17-inch:
Processor: 1.33GHz G4
AirPort: 54Mbps
Memory: 512MB (Max: 1GB) **PC Card:** 1
Cache: 512K L2 **Hard disk:** 80GB
USB 2: 2 **FireWire 400:** 1 **FireWire 800:** 1
Ethernet: 10/100/1000BaseT **S-Video:** 1
Video card: 64MB ATI Radeon 9600
Resolution: 1,440-x-900 pixels
Optical: DVD-R SuperDrive (1x)
Weight: 3.08kg
Price: £2,399
Star Rating: ★★★★★/9.0

UPDATED 18/11/03

The **Power Mac G5** is the spearhead of Apple's attack on the PC workstation market – packed with next-generation technologies, and running IBM's extremely powerful 64-bit G5 processor.

Its phenomenal power isn't just down to the processor. Performance bottlenecks are eliminated by an industry-best frontside bus running at up to 1GHz, and HyperTransport interconnects.

Hard drives are Serial ATA, supporting 1.5Gbps throughput per channel.

All this speed generates a lot of heat, and Apple has created a smart cooling system with up to nine fans and four thermal zones. As fans can slow down depending on the operation in progress, sound levels are reduced, making the Power Mac G5 much quieter than the G4. The addition of USB 2.0 ports means that the Power Mac G5 can support many peripherals previously pegged back at slower USB 1.1 speeds.

The top Power Macs feature two G5 chips – making it the perfect machine for multiprocessor-optimized applications such as Adobe Photoshop and Final Cut.

The ability to add up to 8GB of super-fast DDR RAM is another plus for OS X users – particularly for creative professionals.

As a pro system, it ships with Gigabit Ethernet for faster networking – although you'll have to upgrade your LAN's switches to get all the benefits.

The case is well designed for easy access and quick upgradability. It's even easier to fit RAM and drives than in the Power Mac G4 – you don't need any tools; everything slides and clicks into place with ease.

The Power Mac ships with the Apple iLife programs (iMovie, iTunes, iPhoto; and iDVD).
Pros: Super-fast; next-generation technologies; up to 8GB RAM; DVD-R SuperDrive; digital audio; quiet.
Cons: No good if you want to boot in Mac OS 9, but Classic works fine.

All G5 Power Macs: **USB 2.0:** 2 **FireWire 400:** 2 **FireWire 800:** 1 **AGP 8X Pro:** 1
Ethernet: 10/100/1000BaseT **AirPort:** 54Mbps

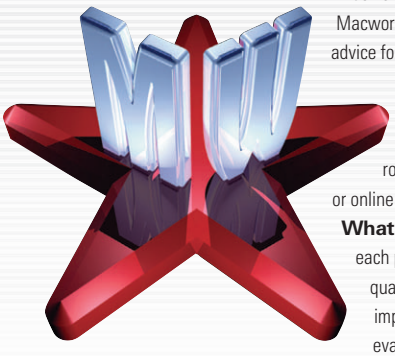
■ Entry-level:
Processors: 1 x 1.6GHz G5
Frontside Bus: 800MHz
Memory: 256MB DDR (Max: 4GB)
Hard disk: 80GB Serial ATA
Optical: DVD-R SuperDrive (4x)
PCI: 3 x 33MHz
Video card: 64MB GeForce FX 5200 Ultra
Price: £1,399
Star Rating: ★★★★/8.5

■ Mid-range:
Processors: 2 x 1.8GHz G5
Frontside Bus: 900MHz
Memory: 512MB DDR (Max: 8GB)
Hard disk: 160GB Serial ATA
Optical: DVD-R SuperDrive (4x)
PCI-X: 1 x 133MHz; 2 x 100MHz
Video card: 64MB GeForce FX 5200 Ultra
Price: £1,899
Star Rating: ★★★★★/9.0

■ High-end:
Processors: 2 x 2GHz G5
Frontside Bus: 1GHz
Memory: 512MB DDR (Max: 8GB)
Hard disk: 160GB Serial ATA
Optical: DVD-R SuperDrive (4x)
PCI-X: 1 x 133MHz; 2 x 100MHz
Video card: 64MB ATI Radeon 9600 Pro
Price: £2,299
Star Rating: ★★★★★/9.0

Macworld Star Ratings

Recommendations you can trust



Macworld's Star Ratings section lets you compare Macintosh products by providing summaries of Macworld's authoritative hardware product reviews from the past year. It includes detailed buying advice for each product category and a fuller description of our Editors' Choice winners. Alongside the list of Macworld Star Ratings are handy tips and further product buying advice.

Star Ratings for Mac systems are published in the Mac Systems Guide – see earlier. Subscribers can go to **www.macworld.co.uk** to explore our comparative feature round-ups and reviews for both software and hardware. Listings tell you which back-issue, or online archive, to search.

What the scores mean The number of stars indicates the product's level of quality; each product also gets a numeric score that provides a more exact assessment of the product's quality within that level. We evaluate seven factors to derive the star rating: feature set; design implementation; performance; reliability; ease of use; innovation; and value. We take these evaluations, weight their importance for each product class, and calculate the final score.

REAL PRODUCTS	REAL RATINGS	
★★★★★	9.0 to 10.0	Outstanding
★★★★	7.0 to 8.9	Very good
★★★	5.0 to 6.9	Good
★★	3.0 to 4.9	Flawed
★	0.0 to 2.9	Unacceptable

Macs are used in most recording studios because a Mac's PowerPC processor is more efficient than Intel chips running at the same speed, so it can handle extra channels and signal processing, or both simultaneously. Apple's **GarageBand** (part of the £39 **iLife** suite) is a great place to start for budding digital musicians. See Macworld July 2003 for professional solutions.

If you're still linking Macs with 10BaseT **Ethernet**, move to the faster 100BaseT, available on all current Macs. The latest Power Macs and PowerBooks come with 1000BaseT (Gigabit) Ethernet, which is even faster than 100BaseT.

Apple's **AirPort Extreme** is a fast wireless-networking technology. Add a £59 (2.0) or £79 (Extreme) card, and you can network and browse the Web cablelessly up to 150ft away from your £149 or £189 Base Station. AirPort works with all current Macs, and is now a viable alternative to wire-based networking. If you can, upgrade your Internet connection to **broadband**, via ADSL, cable or satellite. You'll need either an ADSL router (recommended) or a special modem. Add extra peripherals Macs with a **USB** or **FireWire hub**.

It's a snap to load digital photos into a Mac. With **iPhoto**, digital photography moves to an even higher level. **Resolution** of digital cameras is measured in horizontal and vertical pixels: 1,024-x-768, etc. High-resolution images show a greater level of detail – and can be more readily enlarged – than images with fewer pixels. Manufacturers also list resolution in terms of the total number of pixels. For example, 1,280 horizontal by 960 vertical pixels create a total of 1.2 million pixels (1,280-x-960 = 1.2 megapixels.

Any camera with an aggregate resolution of over 1 million pixels is referred to as a **megapixel** camera. If you plan to use images on the Web, you can get by

AUDIO / MUSIC

★★★★/7.0	**AV320**, Archos, *01264 366 022*, £560 (inc. VAT). Audio and video in your hand. Outputs to TV, but not too easy to use.	*Nov 2003*
★★★★/8.5	**E2c,** Shure, *Handheld Audio, 020 8880 3243,* £76 (inc. VAT). Great sound, and secure-fit headphones, but a little pricey.	*April 2004*
★★★★/8.7	**E3c,** Shure, *Handheld Audio, 020 8880 3243,* £149 (inc. VAT). Amazing sound, small headphones, and well worth every penny.	*April 2004*
★★★★/8.7	**HD 280 Professional,** Sennheiser, *0800 652 5002* £99 (inc. VAT). Outstanding sound, fully enclosed headphones.	*April 2004*
★★★★/8.4	**HD 437,** Sennheiser, *0800 652 5002,* £19.95 (inc. VAT). Inexpensive headphones, great sound, but bulky.	*April 2004*
★★★/6.5	**In-ear headphones,** Apple, £35 (inc. VAT). Apple's own-brand earbuds still lack that quality feel and sound.	*April 2004*
★★★★★/9.0	**iPod 20GB,** Apple, £299 (inc. VAT). Super-slim player holds 5,000 tunes, has solid-state controls, and dock.	*Nov 2003*
★★★★★/9.2	**iPod 40GB,** Apple, £399 (inc. VAT). Super-slim player holds 10,000 tunes, has solid-state controls, and dock.	*Nov 2003*
PREVIEW	**iPod mini,** Apple, expected to be £199. The brand-new 4GB MP3 player – complete with new case design.	*March 2004*
★★★★/8.8	**JBL Creature,** Harman @ Computers Unlimited, *020 8200 8282,* £99. Speakers look great, but the sound quality could be better.	*March 2003*
★★★★★/9.2	**Mbox for OS X,** Digidesign, *01753 653 322*, £379. Records, edits and mixes multiple tracks, but needs free USB port on Mac.	*March 2003*
★★★/6.7	**MX 500,** Sennheiser, *0800 652 5002,* £19.95 (inc. VAT). Inexpensive headphones with a volume control.	*April 2004*
★★★★★/9.0	**PowerWave,** Griffin @ AM Micro, *01392 426 473,* £99 (inc. VAT). Excellent-quality audio and includes software.	*March 2003*
★★★★/8.6	**PX 200,** Sennheiser, *0800 652 5002,* £40 (inc. VAT). Compact, excellent sound and good value headphones.	*April 2004*
★★★★/8.7	**SliMP3,** Slim Devices @ Multitask Computing, *01322 380 023,* £209 (inc VAT). Stylish wireless functionality, MP3 streamer.	*March 2003*
★★★★/8.2	**Squeezebox,** Slim Devices, *Multitask Computing, 0871 250 5619,* £249 (inc. VAT). Listen to iTunes on your home stereo.	*Oct 2003*
★★★/6.6	**Voice Recorder,** Belkin, *00800 2235 5460,* £39 (inc. VAT). Nifty microphone for dock-enabled iPods.	*Expo 2003*

CONNECTIVITY / NETWORKING

Servers, routers, software, remote access, SCSI cards, emulators, hubs, adaptors…

★★★★/8.8	**AMX-64**, ADSL Nation, *01865 761 114,* £99 (inc VAT). Affordable 4-port ADSL router that's easy to set-up.	*Expo 2002*
★★★★/8.5	**Cayman 3341**, Netopia, *020 8358 5858,* £99 (inc VAT). Affordable 2-port ADSL router that's easy to set-up.	*Sept 2003*
★★★★/8.8	**DG814**, Netgear, *020 7216 0014,* £95 (inc VAT). 4-port ADSL router that's easy to set-up.	*Expo 2002*
★★★★/7.6	**extendAIR Direct**, Dr Bott; Channel Dynamics, *0870 607 0540,* £139 (inc VAT). Antenna to extend AirPort's range.	*Jan 2004*
★★★★/8.5	**GSW-8**, Corega, *08705 168 626,* £115 (inc VAT). 8-port Gigabit Ethernet switch.	*Sept 2003*
★★★★/7.5	**SpeedTouch 510**, *01295 222 170,* £163 (inc VAT). Stylish and secure ADSL router, let down by hard-to-follow set up.	*Expo 2002*
★★★★/8.8	**SpeedTouch 330**, Alcatel, *01295 222 170,* £79 (inc VAT). Stylish, compact ADSL modem that's Mac OS X-friendly.	*Expo 2002*
★★★★/8.7	**StingRay**, Hermstedt, *020 8200 8282,* from £2,895 (ex VAT). Cheap to run, secure and easy-to-use file-transfer solution.	*Feb 2003*

DIGITAL CAMERAS / CAMCORDERS / VIDEO-CON

Consumer and professional; still and video; Apple's iPhoto. All prices include VAT.

Digital-still cameras

★★★★/8.1	**007 JB1**, Digital Dream, *01304 248 200*, £69. Zippo-sized 0.3-megapixel gadget-camera – basic quality, but tons of fun.	*Expo 2003*
★★★/6.7	**Camedia C-350**, Olympus, *0800 072 0070*, £249. Easy to use and traditionally styled 3.2-megapixel model.	*Aug 2003*
★★★/6.9	**C-740 Ultra Zoom**, Olympus, *020 7253 2772*, £299. 3.2-megapixel unit offering excellent images, but poor documentation.	*Dec 2003*
★★★★/7.0	**Caplio G4/Wide**, Ricoh, *01782 753 300,* £199. A 3.2-megapixel model offering fast shutter response and a great lens.	*Jan 2004*
★★★/6.7	**Cyber-shot DSC-V1**, Sony, *08705 111 999*, £546. Well-designed 5-megapixel model; delivers noisy shots, though.	*Dec 2003*
★★★/6.5	**Dimage Xt**, Minolta, *01908 200 400,* £249. Slimline 3.2-megapixel unit with easy-to-use movie mode.	*Dec 2003*
★★★★/8.7	**EOS 10D**, Canon, *08705 143 723,* Body-only, £1,499. Great digital SLR with well-balanced mix of features, comfort and quality.	*Oct 2003*
★★★★/8.6	**EOS 300D**, Canon, *08705 143 723,* £999. True SLR with removable lenses and low price, but no rear-mounted control-wheel.	*Expo 2003*
★★★★/8.6	**FinePix A303** Fujifilm, *020 7586 1477,* £449. SuperCCD offers an effective resolution of six megapixels.	*Sept 2003*
★★★★/7.8	**FinePix F410 Zoom** Fujifilm, *020 7586 1477,* £299. Decent 3-megapixel entry-level with 3x zoom.	*Sept 2003*
★★★★/8.5	**FinePix F601 Zoom** Fujifilm, *020 7586 1477,* £499. SuperCCD offers an effective resolution of six megapixels; funky look.	*Sept 2003*
★★★/6.6	**Lumix DMC-FZ1**, Panasonic, *08705 357 357,* £329. Stunningly fast 2-megapixel unit that unfortunately lacks full manual controls.	*Dec 2003*
★★★★/7.5	**Mju 300**, Olympus, *020 7253 2772,* £299. Responsive 3.2mp model with reliable picure quality, but a lack of manual controls.	*Jan 2004*
★★★★/8.5	**PowerShot A80**, Canon, *08705 143 723,* £349. Responsive 4-megapixel camera that boasts spanking image-quality.	*Expo 2003*

★★★★/8.0	**PowerShot G5**, Canon, *08705 143 723,* £628. An excellent 5-megapixel camera with add-on lens and flash support.	*Dec 2003*
★★★★/8.6	**Photosmart 735**, HP, *08705 47 47 47,* £199. A cheap-as-chips, no-nonsense 3.2-megapixel camera with 3x optical zoom.	*Nov 2003*
★★★★/8.2	**Revio KD-420Z**, Konica Minolta, *020 8751 6121,* £249. Blindingly fast and rugged 4-megapixel model with great image quality.	*Jan 2004*
Consumer digital camcorders		
★★★★/8.0	**DM-MV5i,** Canon, *0800 616 8883*, £850. This camcorder has good specs, but is £50-£100 more than equally specced models.	*March 2003*
★★★★/8.5	**DM-MX2i,** Canon, *0800 616 8883*, £1,149. With optical stabilization, this camcorder delivers crisp pictures – at a price.	*March 2003*
★★★★★/9.0	**DVX100**, Panasonic Broadcast, *08700 100 464,* £3,195. Film-style aesthetics without the Hollywood budget.	*Nov 2003*
★★★/6.5	**GR-PD1**, JVC, *0870 330 5000*, £2,500. High Definition camcorder with 16:9 mode and MPEG-2 recording. Little Mac support.	*Expo 2003*
★★★★/8.6	**iSight**, Apple, £119. Idiot-proof, portable webcam that ties in well with iChat AV.	*Sept 2003*
★★★★/8.7	**MVX150i,** Canon, *08705 143 723*, £899. This camcorder offers great image quality, 16x zoom and impressive features.	*Sept 2003*
★★★★/8.3	**NV-GS5**, Panasonic, *0870 357 357,* £850. With a decent resolution and variable-speed zoom, the GS5 only lacks a stills mode.	*March 2003*
★★★★/8.6	**NV-GX7**, Panasonic, *0870 357 357,* £750. Excellent image quality, a stills mode and night shooting.	*March 2003*
★★★★/8.7	**DCR-PC8**, Sony, *020 7365 2947*, £549. Great little camcorder that's a joy to use; requires FireWire cable.	*Sept 2003*
★★★★/8.3	**VP-D130**, Samsung, *0800 521 652,* £700. This cheap camcorder is for those who want to keep it simple.	*March 2003*
FireWire webcams		
★★★★/7.7	**Fire-i,** Unibrain; Channel Dynamics, *0870 607 0540*, £92. Great in low light, compact, but mediocre quality on colours and pictres.	*Jan 2004*
★★★★/7.7	**iBot Standard,** Orange Micro; Channel Dynamics, *0870 607 0540*, £88. Great picture quality, but bulky and poor software.	*Jan 2004*
★★★★/8.6	**iSight,** Apple, £119. Excellent picture quality; built-in mic; great design, but poor in low-light conditions. No additional software.	*Jan 2004*
★★★★/8.3	**Pyro 1394 WebCam,** ADS; Datavision UK, *01525 406 886*, £89. Great picture quality and software, but a little bulky.	*Jan 2004*

DISPLAY

Monitors, projectors and video cards.

17-inch flat-panel LCD displays		
★★★★/8.8	**17-inch Studio Display**. Apple, *0800 039 1010*, £549 (inc VAT). Apple's 1,280-x-1,024-pixel screen is big as well as beautiful.	*July 2002*
★★★★/7.7	**C783,** Microtek, *01372 844 880*, £553. Good-value if-dull flat-panel offering built-in speakers.	*July 2002*
★★★★★/8.8	**Gallery 1740,** Formac, *020 8533 4040*, from £528 (inc VAT). Great-looking 17.4-inch 1,280-x-1,024-pixel ADC monitor.	*July 2002*
★★★★/7.7	**SyncMaster 171S**, Samsung, *0800 521 652*, £489. Compact, lightweight LCD screen that's nicely styled.	*July 2002*
18-inch flat-panel LCD displays		
★★★★/7.7	**FlexScan L685-EX,** Eizo, *01483 719 500*, £1,089. Compact 18.1-inch 1,280-x-1,024-pixel LCD monitor.	*July 2002*
★★★★/8.6	**MultiSync LCD 1880SX,** NEC, *0801 201 160*, £959. Compact, attractive 18.1-inch 1,280-x-1,024-pixel LCD monitor.	*July 2002*
★★★★/8.6	**photon18blue**, LaCie, *020 7872 8000*, £899. 18-inch 1,280-x-1,024-pixel LCD screen boasting great image quality.	*July 2002*
19-22-inch flat-panel LCD displays		
★★★★★/9.2	**Cinema Display HD**, Apple, *0800 039 1010*, £1,699 (inc VAT). **Editors' Choice: High-end flat-panel displays** Excellent high-definition 1,920-x-1,200-pixel screen that's suitable for use with high-end digital-video editing.	*March 2003*
★★★★★/9.0	**Cinema Display**, Apple, *0800 039 1010*, £1,009 (inc VAT). Apple's 20-inch screen has a 1,680-x-1,050 wide-screen resolution.	*March 2003*
★★★★/8.5	**FlexScan L767,** Eizo, *01483 719 500*, £734. Affordable 19-inch LCD that comes with a digital interface.	*June 2003*
★★★★/8.3	**FlexScan L985-EX,** Eizo, *01483 719 500*, £1,561. Monster 21-3-inch LCD that's pricey, but is of undeniable quality.	*June 2003*
★★★★/8.5	**MultiSync LCD1920NX,** NEC, *0801 201 160*, £750. A good-value 19-inch LCD that offers a digital interface.	*June 2003*
★★★★/8.3	**MultiSync LCD2080UX,** NEC, *0801 201 160*, £1,048. 20.1-inch LCD that's well-priced, and includes an auto-adjust feature.	*June 2003*
★★★★/8.7	**P922E,** CTX, *01923 810 800*, £545 (inc. VAT). Inexpensive 19-inch LCD with USB 2.0 hub.	*Oct 2003*
★★★★/8.6	**Photon20Vision**, LaCie, *020 7872 8000*, £1,404. Quality 20.1-inch flat panel with calibration option, desk clamp and hood.	*June 2003*
★★★★/8.7	**S962A LCD Monitor,** CTX, *01923 810 800*, £492 (inc VAT). Affordable 19-inch flat-panel display.	*Jan 2004*
21-inch+ CRT displays		
★★★★/8.0	**Diamond Pro 2070SB,** Mitsubishi, *020 7202 6300*, £485. Top features at a great price. It can display at 2,048-x-1,536-pixels at 85Hz.	*April 2004*
★★★★/8.4	**electron22blue IV**, LaCie, *020 7872 8000*, £549. If you can't stretch to a Barco screen, this offers amazing quality and value.	*April 2004*
★★★★/7.0	**FlexScan T966,** Eizo, *01483 719 500*, £659. 21-inch aperture-grille at a reasonable price.	*Jan 2003*
★★★★/7.9	**Multiscan F520,** Sony, *08705 111 999*, £769. This is a high-quality monitor, but you pay extra for the Sony brandname.	*April 2004*
★★★★/7.1	**P225f,** Viewsonic, *01293 643 900*, £399. Inexpensive and low on features, but it's a still 22-inch CRT display for under £400!	*April 2004*
★★★★/8.3	**Reference Calibrator V,** Barco@Typemaker, *0221 604 1234*, £3,250. Pricey, but colour-accurate display is losing edge on rivals.	*April 2004*
★★★★/8.3	**SM1200NF**, Samsung, *0800 521 652*, £489. The screen looks dated, but it's feature rich with a decent resolution.	*Jan 2003*
★★★★/7.7	**VisionMaster Pro 513,** Iiyama, *01438 745 482*, £369. A great choice if you want cheap and cheerful.	*Jan 2003*
Projectors		
★★★★/7.6	**LiteShow**, InFocus, *0800 028 6470*, £349. AirPort connection to the LP120 projector.	*Dec 2003*
★★★★★/9.1	**LP120**, InFocus, *0800 028 6470*, £1,999. Tiny, fully featured 1,100 ANSI lumen projector – the best there is.	*Dec 2003*
Display/TV hardware		
★★★★/8.5	**Alchemy TV**, Miglia @ AM Micro, *01392 426 473*. TV tuner that can transfer VHS tapes to a Mac.	*Jan 2004*
★★★★/8.0	**CinemaLift**, LCDArms, *www.lcdarms.com*, £175. Well-designed flexible arm for raising a Cinema Display up to eye level.	*Jan 2004*
★★★★/8.2	**Eye TV**, El Gato @ CU, *020 8358 5858*. Easy-to-set-up method of watching television on your Mac.	*May 2003*

INPUT

Mice, trackballs, digital tablets… All prices include VAT.

★★★★/8.2	**Graphire3 Studio XL**, Wacom, *Computers Unlimited, 020 8358 5858*, £179. A5 tablet with stylus and scroll-wheel mouse.	*Dec 2003*
★★★/6.9	**Harmony Remote SST-768**, Harmony, *Invision UK, 01449 677 233*, £200. Expensive programmable USB remote control.	*April 2004*
★★★★/7.3	**Wireless Keyboard**, Apple, *0800 039 1010*, £59. Bluetooth keyboard complete with 128-bit encryption.	*Dec 2003*
★★★★/8.8	**Wireless Intellimouse Explorer 2.0**, Microsoft, *0870 207 7377*, £55. Five-button, side-scrolling optical mouse.	*Jan 2004*

with a low-res camera. If you want to use the images in print at anything greater than postage-stamp size, at least a two-megapixel camera is a must. Look for optical resolution; ignore interpolated resolution.

Select a camera that offers the option of switching between high-res/fewer shots and lower-res/many shots. SmartMedia **storage** cards are cheaper but flimsier, and offer less storage than CompactFlash cards. Sony cameras use MemorySticks. Other formats include SecureDigital, Multimedia, and the tiny XD Picture card. Digital cameras tend to be **battery** hogs, so rechargeable batteries are a must. NiCad batteries are cheaper than NiMH batteries, but the latter last longer between charges.

Those who don't own a **digital-video camcorder** are missing out on one of the best reasons to own a Mac. All of Apple's Mac models, even the least-expensive iMac, have built-in FireWire ports and iMovie software, making the creation of professional-looking videos for business, home, and school projects very easy.

Most camcorders use MiniDV tapes, tiny cassettes that store 60 minutes of high-quality digital video in standard-play mode or 90 minutes in long-play mode. Sony's MicroMV digital-video format is not yet supported. Once you record video, you can upload it to a Mac via a **FireWire** cable and edit it using either Apple's **iMovie** or a higher-end program such as Apple's **Final Cut Pro/Express**. Add effects with **Adobe After Effects**.

The DV format – used by DV, MiniDV, and Digital 8 cassettes – stores video at more than twice the resolution of standard VHS or 8mm tapes, and it stores 25 per cent more information than S-VHS or Hi8 tapes. Colour fidelity and noise immunity are also markedly better on DV tapes than on analogue tapes, resulting in breathtaking video quality. And because the recorded video is digital, you can upload it to your Mac or copy it to another DV tape without any loss of quality.

Aim for a FireWire digital camcorder with both **DV-In** and **-Out**, as this means you can transfer your edited movie from your Mac back to MiniDV tape.

The first decision you'll need to make is whether to get a flat-panel display, based on liquid crystal display (**LCD**) technology, or a cathode-ray tube (**CRT**) monitor.

CRTs are cheaper and offer higher colour vibrancy and accuracy than LCDs. If low price is your biggest requirement, or if you're looking for a display for publishing or design work, go with a CRT.

An LCD display's advantage is unparalleled sharpness and ultra-thin profile. If space considerations, or a cutting-edge look, top your list of concerns, and you can afford it, today's flat-panel displays are worth a serious look. With a flicker-free screen and tiny footprint, an LCD is easy on the eyes in more than one sense.

Today's monitors offer one or more of the following connections: VGA, DVI, or ADC. A screen hooked-up to a digital DVI or ADC connector offers sharper, clearer images than those connected via an analogue VGA connector. Analogue LCDs can display "noise", a by-product of converting the video signal from digital to analogue and then back again. The ADC (Apple Display Connector) port combines a DVI signal with power and USB. The single cable leaves your desk relatively clutter free, but ADC is available only on cards shipping in Power Mac G4s and Cubes released after August 2000.

Except for the Apple displays, most monitors can plug directly into an analogue VGA connector, making them compatible with current and older desktops and laptops. Some models offer both analogue and digital inputs. These are the most compatible, as they can plug

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into DVI or standard VGA connectors and, with a third-party adaptor, into ADC ports. The Apple displays require the ADC port available on only recent G4 and G5 desktops.

When comparing the image size of displays, be sure to check the **viewable image size**, not the claimed size of the CRT or flat-panel. The **resolution** of a monitor is expressed in horizontal and vertical pixel dimensions, and range from 640-x-480 pixels to 1,600-x-1,200 pixels and beyond. The higher the resolution, the more you will be able to see on-screen. The more inches, the larger the pixels.

A CRT's **dot pitch** measures how close adjacent phosphor dots (or stripes on aperture-grille CRTs) are to each other. In general, the smaller the dot pitch, the sharper (and more expensive) the display will be.

On CRT monitors, a low **refresh rate** – how many times your Mac sends a fresh copy of the screen image to your display – implies flicker, a major cause of eyestrain. The higher the refresh rate, the better. LCDs don't suffer from flicker at all.

High-end monitors may also come with **calibration** software and devices for ensuring accurate colour for publishing and design applications.

Input devices come in many shapes and sizes. Go for an **optical mouse**, which are less prone to wear-&-tear than the old-style mice. Apple's mouse is good, but lacks extra buttons and a scroll wheel – fantastic for zipping through documents and Web pages.

Graphics tablets are now very advanced and often come with pressure-sensitive pens, which enable more control when using natural-media graphics software like Painter. The harder you press, the thicker the line. They take some getting used to, but many artists swear by them – not at their mice!

The range of printers available is huge: fast network printers, for business, to slower-but-cheap colour printers for home.

Decide what you need from your printer, look at your budget and, most importantly, look at the **output** of the printer. The only way to avoid disappointment is to have a dealer print out a page in front of you. Remember that the test prints shown in shops are often done on expensive glossy paper.

Speed is also an issue. At home, waiting 15 minutes for a colour page to print may be acceptable. In the office, however, time is money – meaning that faster printers are needed.

Home/small office use: A4 Inkjets are the cheapest printers to buy, and can output near-photographic quality prints – great with digital cameras. If you mainly run-out black-&-white prints of letters and so forth, consider a mono laser printer (which cost from around £250).

Business use: Fast, networkable mono lasers cost from £500. Decent colour lasers will set you back at least £1,000. Design studios should consider a colour proofer – available from HP and Epson.

Multifunction devices: Companies such as HP and Lexmark offer all-in-one devices that include a printer, scanner, copier and fax. These save desk space, but aren't the best alternative at each of their functions.

Remember to find out the price of **consumables**. An inkjet can get through a cartridge in just a few months. Macworld tests for how many high-colour pages you'll get out of a cartridge, so check our product round-ups.

★★★/6.5	**Wireless Mouse**, Apple, *0800 039 1010*, £59. Bluetooth mouse. Lacks a scroll-wheel.	*Dec 2003*
★★★★/8.8	**Wireless Optical Desktop Elite Executive Edition**, Microsoft, *0870 207 7377*, from £99. All-singing, all-dancing keyboard.	*Jan 2004*
★★★★/8.9	**Wireless Optical Mouse 2.0**, Microsoft, *0870 207 7377*, £39. Super-smooth scrolling; scrolls sideways; three-buttons.	*Jan 2004*

PDAs

Personal digital assistants and related third-party hardware and software.

★★★★/8.0	**Clie PEG-NX70V**, Sony, *020 7365 2947*, £527. PDA offering stereo sound, and Memory Stick and CompactFlash slots.	*May 2003*
★★★★/7.5	**Tungsten E**, Palm, *0118 927 8700*, £149. Affordable, no-frills PDA with SD-card slot	*Expo 2003*
★★★★/8.7	**Tungsten T3**, Palm, *0118 927 8700*, £329. Bluetooth-compatible PDA with big screen and multimedia capabilities.	*Expo 2003*
★★★★/8.0	**Zire**, Palm, *0118 927 8700*, £88. Inexpensive PDA with rechargeable batteries.	*May 2003*

PRINTING

Inkjets, lasers, workgroup, thermal wax, dye sublimation, solid ink and software solutions.

All-in-one printer, scanner, copiers *(All prices include VAT).*

★★★★/8.9	**PSC 1205**, Hewlett-Packard, *08705 474 747*, £99. Compact, affordable, relatively fast all-in-one offers good quality photos.	*Sept 2003*
★★★★/8.9	**PSC 2175**, Hewlett-Packard, *08705 474 747*, £169. Fast all-in-one with six-ink option for even better photo quality.	*Sept 2003*
★★★/6.8	**Stylus CX3200**, Epson, *0800 200 546*, £149. All-in-one printing, scanning and faxing.	*Jan 2003*
★★★★/7.4	**x1150**, Lexmark, *0870 444 0044*, £79. Affordable, good-looking but very slow all-in-one.	*Sept 2003*
★★★★/8.2	**x5150**, Lexmark, *0870 444 0044*, £129. Affordable, good-looking but slow all-in-one.	*Sept 2003*

Consumer/entry-level pro *(All prices include VAT).*

★★★★/8.3	**DeskJet 5150**, HP, *08705 474 747*, £89. A4 inkjet that excels at colour photos; optional six-colour cartridge.	*Nov 2003*
★★★★/8.9	**i450**, Canon, *08705 143 723*, £99. Low-price colour A4 inkjet that outputs great quality for the price.	*Sept 2003*
★★★★/8.6	**i470D**, Canon, *08705 143 723*, £179. A4 inkjet that outputs great quality, and includes memory-card reader.	*Sept 2003*
★★★★/8.9	**i6500**, Canon, *08705 143 723*, £339. Great A3+ photographic output, very fast and quiet.	*Sept 2003*
★★★★/8.6	**i905D**, Canon, *08705 143 723*, £250. A4 photo-printer. Relatively speedy and prints on CDs, but colour profiles need improving.	*March 2004*
★★★★/8.4	**i965D**, Canon, *08705 143 723*, £250. As i905D but much faster. Lacks the i905's computerless printing capabilities.	*March 2004*
★★★★/8.9	**i990**, Canon, *08705 143 723*, £299. Near-perfect quality, lightning-fast A4 inkjet printer – worth every penny.	*April 2004*
★★★/6.6	**P-440**, Olympus, *020 7253 2772*, £399. Expensive A4 inkjet. Speedy, but print-quality and colour-matching are lacklustre.	*March 2004*
★★★★/8.3	**Photosmart 7960**, HP, *08705 474 474*, £249. A4 inkjet. Decent colour reproduction, but expensive and rather slow.	*March 2004*
★★★★/8.7	**S6300**, Canon, *08705 143 723*, £379. Colour A3+ inkjet offering easy-to-achieve colour accuracy and economic ink usage.	*Oct 2002*
★★★★/8.3	**Stylus C60**, Epson, *0800 200 546*, £79. This entry-level 1,400dpi model is slow – but offers stunning output for your money.	*Oct 2002*
★★★★★/9.0	**Stylus C42UX**, Epson, *0800 200 546*, £59. Slow, but offers spectacular colour quality for the price.	*Oct 2002*
★★★★/7.7	**Stylus C80**, Epson, *0800 200 546*, £149. Entry-level 2,800dpi model that uses pigment inks for better output on plain paper.	*Oct 2002*
★★★★/8.3	**Stylus Photo 890**, Epson, *0800 200 546*, £169. Quality edge-to-edge A4 colour inkjet that's also fast.	*Oct 2002*
★★★★/8.7	**Stylus Photo 895**, Epson, *0800 200 546*, £179. Same as the 890 but with extra features for digital photographers.	*Oct 2002*
★★★★/8.9	**Stylus Photo 830U**, Epson, *0800 200 546*, £99. A photo printer for £99 is a great deal – especially when output is outstanding.	*July 2003*
★★★★/8.1	**Stylus Photo 925**, Epson, *0800 200 546*, £249. Doesn't need a computer to print from memory cards.	*Jan 2003*
★★★★/8.6	**Stylus Photo 935**, Epson, *0800 200 546*, £229. Top-quality output, six-colour inks, standalone printing.	*Sept 2003*
★★★★★/9.0	**Stylus Photo 950**, Epson, *0800 200 546*, £379. The edge-to-edge A4 950 can print on CDs, and paper rolls. Classic only.	*Oct 2002*
★★★★/8.9	**Stylus Photo R300**, Epson, *0800 200 546*, £129. Six-colour A4 inkjet. Computerless prints, excellent colour. Detail could be better.	*March 2004*
★★★★/7.6	**Stylus Pro 7600**, Epson, *0800 200 546*, £2,814. Excellent image quality and print speed for a wide-bodied printer	*Feb 2003*
★★★/5.5	**Z705**, Lexmark, *0870 444 0044*, £59. Affordable A4 inkjet that sadly lacks in speed and output-quality.	*March 2004*
★★★★/8.2	**z705 Photo JetPrinter**, Lexmark, *0870 444 0044*, £59. Affordable but very slow.	*Sept 2003*

Professional *(All prices exclude VAT)*

A3 colour lasers

★★★★/7.1	**AcuLaser C8600PS**, Epson, *0800 200 546*, £3,879. Slow yet high-quality graphics-oriented A3+ colour laser.	*May 2003*
★★★★/8.8	**Elite Color 16**, GCC, *020 8380 6870*, £1,399. Bargain-priced, duplexing high-quality colour laser printer.	*Expo 2003*
★★★★/8.7	**C752n**, Lexmark, *0870 444 0044*, £1,879. A4 colour laser that offers decent-quality prints at a fair speed.	*Expo 2003*
★★★★/8.7	**C9500**, Oki, *0800 917 6015*, £4,869. Super-fast A3 laser ideal for the most demanding office environment.	*May 2003*
★★★★★/9.1	**CL30**, Xanté, *0870 742 0802*, £4,249. Feature-laden graphics A3 laser printer that is both speedy and well-priced.	*May 2003*
★★★★★/9.0	**PlateMaker 4**, Xanté, *0870 742 0802*, £4,499. Complex, quality mono laser printer for producing computer-to-plate plates.	*July 2003*
★★★★★/90	**Phaser 6250n**, Xerox, *0870 241 3245*, £1,609. Fast, affordable colour laser printer that offers excellent quality	*Expo 2003*
★★★★/8.4	**Phaser 7700**, Xerox, *0870 241 3245*, £5,520. Speedy, well-priced graphics A3 laser.	*May 2003*

A4 colour lasers

★★★★/8.1	**AcuLaser C1900PS**, Epson, *0800 200 546*, £1,029. Multi-pass model that does well on speed, quality and price.	*May 2003*
★★★★/8.0	**AcuLaser C4000PS**, Epson, *0800 200 546*, £1,749. Single-pass laser that offer great output, but at a high price.	*May 2003*
★★★★/8.3	**C750**, Lexmark, *08704 440 044*, £2,059. Ultra-speedy single-pass laser that's also economical on consumables.	*May 2003*
★★★★/7.7	**HL-4000CN**, Brother, *0845 606 0626*, £1,780. Competitively priced single-pass model.	*May 2003*
★★★★/8.1	**HP 2500**, HP, *08705 474 747*, £1,155. Affordable, if slow, multi-pass A4 that offers decent output.	*May 2003*
★★★★/7.3	**HP 4600**, HP, *08705 474 747*, £1,752. Reasonably priced single-pass A4 model.	*May 2003*
★★★★/8.0	**Magicolor 2350**, Minolta-QMS, *01784 442 255*, £849. High quality at a superb price, but rather slow.	*May 2003*
★★★★/7.3	**Magicolor 3100**, Minolta-QMS, *01784 442 255*, £1,795. A slightly overpriced single-pass laser printer that offers quality output.	*May 2003*
★★★★/8.0	**C5300n**, Oki, *0800 917 6015*, £1,069. Well-priced single-pass A4 laser that's both speedy and of high quality.	*May 2003*
★★★★/8.0	**C7500n**, Oki, *0800 917 6015*, £2,919. Speedy, feature-rich single-pass A4 laser.	*May 2003*
★★★★/7.7	**Phaser 6200n**, Xerox, *0870 241 3245*, £2,010. Speedy, if expensive, single-pass A4 printer.	*May 2003*

★★★★/7.7 **Phaser 8200**, Xerox, *0870 241 3245*, £1,610. Solid-ink single-pass A4 laser offers good quality and is also well-priced. *May 2003*

★★★★/8.4 **AW 1200**, Xanté, *0870 742 0802*, £799. Inexpensive 1,200dpi mono A3+ laser printer. *Oct 2002*

SCANNING

Consumer and professional scanners

Consumer/entry-level *(Prices include VAT. All models USB)*

★★★★/8.2 **CanoScan D2400UF**, Canon, *08705 143 723*, £219. 2,400dpi A4 scanner offering transparency adaptor. *Nov 2002*

★★★★/8.0/8.1 **CanoScan LiDE 20 / 30**, Canon, *08705 143 723*, £59; £79. Ultra-thin entry-level 600dpi and 1,200dpi A4 scanners. *Nov 2002*

★★★★/8.6 **IRISPen II Executive**, IRIS,@ Softline *01883 745 111*, £129. Cheap, accurate pen scanner that works with any application. *May 2003*

★★★★/8.1 **Perfection 1260**, Epson, *0800 220 546*, £79. Basic 1,200dpi A4 scanner offering optional £45 transparency adaptor. *Nov 2002*

★★★★/8.0x **Perfection 1660 Photo**, Epson, *0800 220 546*, £169. 1,600dpi A4 scanner offering a decent software bundle. *Nov 2002*

★★★★/8.6 **Perfection 2400 Photo**, Epson, *0800 220 546*, £199. Capable 2,400dpi A4 scanner with built-in transparency adaptor. *Nov 2002*

★★★★★/9.0 **ScanJet 3500c**, HP, *0870 547 4747*, £79. Great-value OS X-compatible 1,200dpi model. *Nov 2002*

★★★★/8.6 **ScanJet 4670**, HP, *0870 547 4747*, £179. Innovative design; scans slides; easy storage, but cools looks mean a higher price. *Jan 2004*

★★★★/7.0 **ScanJet 8200**, HP, *0870 547 4747*, £449. 4,800dpi resolution; transparency adaptor; USB 2.0. Overpriced. *Nov 2003*

★★★/6.8 **ScanJet 8250**, HP, *0870 547 4747*, £749. 4,800dpi resolution; transparency adaptor; USB 2.0; document feeder. Expensive. *Nov 2003*

Professional

★★★★/7.2 **ArtixScan 1100**, Microtek, *01327 844 880*, £1,408. Overpriced SCSI-2, 1,000dpi, 42-bit A4 scanner. *Expo 2002*

★★★★★/9.0 **ArtixScan 1800f**, Microtek, *01327 844 880*, £1,799. 1,800-x-3,600dpi A4 flatbed giving unbeatable scan quality . *July 2003*

★★★★/8.3 **Expression 1680 Pro**, Epson, *0800 220 546*, £895. Quality USB/SCSI 1,600-x-3,200dpi, 48-bit A4 scanner, but lacking FireWire. *Expo 2002*

★★★★/7.9 **Expression 1640XL Pro**, Epson, *0800 220 546*, £2,219. SCSI/USB 1,600-x-1,300dpi, 42-bit A3 model that lacks FireWire. *Expo 2002*

★★★★/8.9 **PowerLook 1120**, Umax, *0870 906 4400*, £849. FireWire 1,200-x-2,400dpi, 42-bit A4 scanner offers great balance of features. *Expo 2002*

★★★★/7.8 **PowerLook 2100XL**, Umax, *0870 906 4400*, £999. SCSI-2, 42-bit A3 scanner offers modest resolution of 800-x-1,600dpi. *Expo 2002*

★★★★/7.0 **ScanJet 8290**, HP, *0870 547 4747*, £1,449. 4,800dpi; transparency adaptor; 25ppm document feeder; software is Windows-only. *Nov 2003*

★★★★/8.8 **ScanMaker 9800XL** Microtek, *01327 844 880*, £1,748. FireWire/SCSI-2/USB 2.0, 1,600-x-1,300dpi, 48-bit A3 scanner.

Film scanners *(All prices include VAT)*

★★★★/7.8 **SmartScan 2700**, SmartDisk, *01252 530 960*, £189. Easy to use, inexpensive 2,700-pixel USB film scanner. *July 2003*

★★★/6.7 **SmartScan 3600**, SmartDisk, *01252 530 960*, £189. 3,600-pixel FireWire film scanner that suffers from limited dynamic range. *July 2003*

★★★★/8.0 **Dimage Scan Dual III**, Minolta, *01908 200 400*, £299. 2,820dpi Film scanner offering excellent dynamic range and colour fidelity. *July 2003*

★★★★/8.5 **Dimage Scan Elite II**, Minolta, *01908 200 400*, £549. 2,820dpi FireWire film scanner with Digital ICE and GEM technologies. *July 2003*

If you need to get printed images into your Mac, but you don't have a digital camera or want to put your old photos on the Web, you need a scanner. Before buying a scanner you must consider the final output you're aiming for. If your job is for a glossy magazine, then a high-resolution drum scanner is what you need.

It's more likely, though, that that kind of scanning would be done by a pre-press house or a bureau. Some **high-end** flatbed scanners are actually approaching drum-scanner quality. Some professional scanners require a SCSI interface, so new Macs will require that a SCSI card be added. However, manufacturers are now adding FireWire and USB 2.0 interfaces to their top scanners.

You can buy a dedicated **slide scanner** or attach an optional slide tray to your flatbed. Some scanners have neat internal trays for ease of use.

If your needs are less great, there are many fair-quality **low-end** scanners at unbelievably cheap prices. Again, claims for quality are often based on resolution. Look at the optical resolution rather than the interpolated resolution, as interpolation is just a process of digitally enlarging the scan. Make sure that the connection (USB, SCSI or FireWire) is right for your Mac. Scanners often come with bundled software to let you manipulate the images once you have scanned them.

STORAGE & UPGRADES

Hard drives, CD, DVD, removable solutions, servers, and processor-upgrade cards

Servers

★★★★/8.0 **Xserve**, Apple, from £2,399 including VAT. Apple's easy-to-manage enterprise server is well-placed to compete with PC solutions. *Oct 2003*

Network Attached Storage

★★★★/8.5 **Max**, CMS, *01256 681 246*, from £1,999. Fast and robust storage that's easy to use. *Jan 2003*

Hard drives

★★★★/8.2 **ABSplus**, CMS, *01256 681 246*, from £209. Portable FireWire backup solution. *Jan 2003*

★★★★/8.8 **Big Disk 800**, LaCie, *020 7872 8000*, from £559. High-capacity FireWire 800 hard drives: 400GB (7,200rpm), 500GB (5,400rpm). *Aug 2003*

★★★★/8.5 **Caviar WD2000**, Western Digital, @ Dabs, *www.westerndigital.com*, £201. Cheap, huge 200GB EIDE drive. *June 2003*

★★★★/8.4 **Cobra 800**, EZQuest @ Channel Dynamics, *0870 60 70 540*, from £245. 7,200rpm FireWire 800 hard drive: 120/200/250GB. *Aug 2003*

★★★★/8.5 **Crossfire 120GB**, SmartDisk, *01252 530 960*, from £153. FireWire/USB 2.0 hard drive. Compact, good software, but not too speedy. *Expo 2003*

★★★★/8.3 **Desktop Hard Drive**, SmartDisk, *01252 530 960*, from £139. 7,200rpm FireWire hard drive: 80/120GB. *April 2003*

★★★★/8.3 **Fire800**, WiebeTech @ Technical Earth, *020 8450 0303*, from £249. Reasonably priced 120/180/240GB. FireWire 800 drives. *Aug 2003*

★★★★/8.5 **HDD 250**, Iomega, *www.iomega.co.uk*, £309. Fast 250GB FireWire hard-drive. Slow with USB 2.0, though. *Expo 2003*

★★★★/8.8 **Ice Warrior 800**, Box Clever, *01525 240 188*, from £199. Affordable 120/200/250GB FireWire 800 hard drives. *Aug 2003*

★★★★/8.3 **Media Bank HS-R**, Miglia, *0870 747 2988*, from £299. Dual hard-drive RAID array. FireWire 800 interface. *March 2004*

★★★★/8.6 **One Touch 250**, Maxtor, *01923 712 448*, £329. Attractive FireWire-only hard drive with decent software bundle. *Expo 2003*

★★★★/8.0 **PowerPlay Pro**, SmartDisk, *01252 530 960*, from £59. Handy collar-clip-sized 64MB USB storage and music player. *July 2003*

★★★★/8.4 **Rover**, SmartDisk, *01252 530 960*, £59. Radio-controlled USB slide-show remote-control with 32MB of storage *July 2003*

★★★★/8.5 **The Kube 500GB**, Box Clever @ Mac & More, *01525 240 188*, from £599. 5,400rpm FireWire RAID hard drive. Also 400/240GB. *May 2003*

★★★★/8.0 **Xserve RAID**, Apple, £8,999 including VAT. Impressive 2.52TB server-storage solution. *Oct 2003*

External CD/DVD drives (all inc. VAT).

★★★★/8.5 **DSR Tower**, Microboards Technology, *0845 230 7800*, Mass DVD duplication. Fast, easy to use, but can't copy encrypted DVDs. *April 2004*

★★★★/7.7 **Boa FireWire DVD-RW**, EZQuest @ Channel Dynamics, *0870 607 0540*, £317. DVD-R that offers solid performance. *May 2003*

★★★★/8.6 **d2 FireWire DVD-Rewritable Drive**, LaCie, *020 7872 8000*, £304. Includes CaptyDVD 1 Mac DVD-authoring software. *May 2003*

★★★★/8.6 **Devideon**, Formac, *020 8533 2489*, £304. DVD-R that includes Devideon 2 Mac DVD-authoring software. *May 2003*

★★★★/7.4 **DVD Revo FireWire SuperDrive 4x**, Cyclone, @ CompuB, *0800 018 6625*, £363. DVD-R that offers solid performance. *May 2003*

Card readers (all inc. VAT).

★★★★/7.9 **Media Reader**, Belkin, *00800 2235 5460*, £89 (inc. VAT). Multi-format storage-card reader for dock-equipped iPods. *Expo 2003*

Upgrade cards (all inc. VAT).

★★★/6.9 **PowerForce G4 ZIF 550/220**, PowerLogix, *www.powerlogix.com (see Int'l)*, £259. For beige G3, blue-&-white G3, pre-AGP G4 *March 2003*

★★★/6.8 **PowerForce G4 Series 100 1GHz**, PowerLogix, *www.powerlogix.com (see Int'l)*, £630. AGP and Gb Ethernet PMG4s, Cube *March 2003*

★★★/6.6 **PowerForce Dual G4 800MHz**, PowerLogix, *www.powerlogix.com (see Int'l)*, £690. AGP and Gb Ethernet PMG4. *March 2003*

★★★/6.5 **PowerForce Dual G4 1GHz**, PowerLogix, *www.powerlogix.com (see Int'l)*, £1,030. AGP and Gb Ethernet PMG4. *March 2003*

★★★★/7.5 **Encore/ZIF G4 500**, Sonnet, *www.sonettech.com (see Int'l)*, £259. Beige G3, blue-&-white G3, Pre-AGP G4. *March 2003*

Hard drives: It's easy to add extra internal hard disks to Power Macs, but other Macs are better served with external drives. All new Macs come with FireWire connections, which are much faster than USB.
You can buy portable FireWire hard drives that you can carry around with you, and also larger, faster drives that sit on the desktop. Buy FireWire 800 drives if your Mac has this super-fast port. Go for the fastest rotational disk speed (measured in rpm), and divide the price by the number of gigabytes to find the price per GB. Buy as big as you can now, to save having to buy again later.
Removable disks: Apple has turned its back on the now defunct 1.4MB **floppy** (what do you think email is for?) but you can still add a USB floppy drive for about £60.

Zip drives are still used for backup. The 250MB Zip supports original 100MB disks, and the 750MB model reads and writes 750MB and 250MB disks, and reads all 100MB disks. Despite the convenience of the format, it 's relatively expensive and less popular now that most Macs have some kind of optical storage as standard.

Subscribers to Apple's .Mac services (£65 per year) get 100MB of **iDisk** Web storage space, which can be used to quickly move data around the world.

CD/DVD: Optical storage technologies (**CD-R**, **CD-RW**, **DVD-R** and **DVD-RAM**) have become increasingly viable alternatives as prices fall dramatically. While stable and cheap – a blank 650MB CD-R sells for 45p – writing to a CD or DVD-RAM can be slow. CD-R is a write-once technology. But, unlike Jaz and Zip disks, dishing out CDs to friends or clients isn't financially painful. Your best CD choice may be a CD-RW (rewriteable) drive, which is a CD-R drive with the added ability to handle rewriteable media.

DVDs can hold 5.2GB of data, and the drives can read standard CDs. Watch movies on your Mac and play the latest multimedia DVDs. SuperDrive Macs can record DVDs that will play in domestic players. Apple's **iDVD** tool makes Macs so much better than Windows PCs in this regard. **MW**

Andy Ihnatko

Be careful when having a rifle through your old CDs – you may find more skeletons in the closet than you thought.

Rip, mix, learn

I've never had much of a desire to amass an army and unite nearly the entirety of Earth's civilized empires under my own iron rule, so I'd probably be out of line if I compared myself to Alexander the Great. Still, I have to admit that when I completed The Big Rip – a six-week period during which I rebuilt my iTunes library, ripping every track of every CD I've ever bought in my life – there was a certain amount of Weeping For I Had Reached The Sea And There Were No Worlds Left To Conquer.

I've been listening to MP3s since 1998. Those of you who were alive back then remember the early problems of digital music. Software was rudimentary, producing low-bitrate files that were often filled with stutters. Plus, who ripped entire *albums?* Back then, only James Bond villains could afford hard-drives with more than a gigabyte of capacity.

As a result, my iTunes library consisted of *some* tracks from *some* CDs, all ripped at poor quality. So five cartons of discs and my Mac G3 tower came out of storage and the guest room became the dedicated Burn Unit. It took me six weeks of sporadic work, but I got through it... and I came to a number of important realizations in the process:

My shame threshold for pop music hovers somewhere underneath Paula Abdul but above Lionel Ritchie Over the past six weeks, I handled every disc I've ever bought. Yes, I *could* have refused to rip something as girly as a disc of Shut Up And Dance extended remixes. But that would suggest I'm not secure about my he-manly hetero masculinity, and besides, these few aberrations are more than made up for by the quantity of Clash and Iggy Pop albums I found. And I must admit that the process of ironing my silk underpants goes *so* much quicker when I'm accompanied by the pulsing techno-beat of Abdul's Cold Hearted Snake.

But then I came across Lionel Ritchie's Greatest Hits, and here my strength of character faltered. Ritchie specializes in the sort of drippy, over-produced love tunes whose sole enduring effect is to convince all the single women at the wedding reception that the groom will be available again in nine to seventeen months. For now, the Lionel Ritchie CD sits in darkness, waiting. Like all evil, it's patient – confident that its time shall inevitably come.

I am an idiot And it's not because I've bought The Who's Who's Next four times, as it turns out. Yes, a less-creative observer would incorrectly conclude that I'm a disorganized spendthrift. But in truth, it's obvious that my enthusiasm for this album was such that it couldn't be suitably contained within a single purchase.

Nope, I'm an idiot for choosing to re-rip all 600 discs as 256K AAC files. "I'm only going to do this once," I reasoned, "so I'm going to rip at nearly the highest possible quality." I was ripping to a 250-gig hard drive, so I had space to spare.

'These days, we rip tracks to libraries. Songs that failed to make an immediate impression don't get ripped, or (thanks to the iTunes Store) are never even purchased. We're condemning ourselves to a diet of hit singles.'

Only *after* I finished The Big Rip did it occur to me that the drive on my iPod is only 15 gigs. So bang, by going to 256K instead of 128K, I've gained a negligible increase in quality and lost about 30-40 per cent of my iPod's song-storage capacity. And choosing AAC instead of MP3 means I've saved myself the hassle and inconvenience of being able to listen to any of these songs on devices that don't run iTunes, like my Home Media-enabled TiVO or my PDA.

But that's okay, because:

There are way bigger idiots than me, and they've all contributed CD title and track listings to the online CD database The one or two times I popped in a CD for which iTunes couldn't find a match, I diligently transcribed information for every field of every track and uploaded it. I'm not the sort of person who expresses their hostility against Humanity by typing in Elvis Costello as the Artist of My Aim Is True's first track, and then enters "(Same Guy)" for each track thereafter. And those who contributed to the Repo Man soundtrack have *names*, sir or madam. They are Black Flag, Suicidal Tendencies and Fear, not "Various."

Digital music will wreck everything Listening to iTunes is utter bliss with 600 complete albums in the library. I keep it on Shuffle Play and I'm constantly hearing songs that (a) I've owned for ten years, but (b) have never heard and (c) love.

I'm too young to have bought my first grown-up records on LP, but it reminds me of what we've lost: the ability to experience an album as an uninterrupted block of music. First we moved to CDs that let us skip songs at the press of a button. Now, we rip tracks to libraries. Songs that failed to make an immediate impression don't get ripped, or (thanks to the iTunes Store) are never even purchased. We're condemning ourselves to a diet of hit singles.

And we're *completely* losing the visceral experience of associating songs with album art. I didn't even miss this until I saw the cover to Joe Jackson's Look Sharp! for the first time in five years, and yes, my heart skipped a beat.

All that's pretty illuminating. But I was sort of disturbed by The Big Rip's final lesson. 10,000 songs were sitting in my iTunes library, and it was time to start slurping playlists down to my iPod. iTunes got started but then it huffily announced that it had encountered an I/O error and refused to proceed.

So after six weeks of diligent effort to ensure that I'd finally have the richest possible assortment of music in my pocket, the final lesson is apparently "Our God is uncaring and unfeeling God, and He only turns His attention to us when he desires cheap amusement". This wasn't a shock to me – He'd made that point pretty clear when I asked Suzanne Montgomery to the junior prom – but I mean, He doesn't have to be such a *jerk* about it, you know? MW

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